

- 43809 U. S. N. M. N. $42^{\circ}20'$ W. $65^{\circ}07'$. Albatross Collection 2522.
Length 34 mm.
- 44504 U. S. N. M. N. $32^{\circ}40'$ W. $76^{\circ}40'$. Albatross Collection
Length 90 mm. 2 examples.
- 50622 U. S. N. M. N. $10^{\circ}57'$ W. $137^{\circ}35'$, south of Hawaii. Length
32 mm. Type of Rhinoscopelus oceanicus.
- 51520 U. S. N. M. Albatross Collection . Length 45 mm.
- 51528 U. S. N. M. Albatross Collection 3926. Length 23 to 44 mm.
4 examples.
- 51529 U. S. N. M. Albatross Collection 4010. Length 27 to 48 mm.
3 examples.
- 51530 U. S. N. M. Albatross Collection 3931. Length 25 mm.
- 51531 U. S. N. M. Albatross Collection 3930. Length 23 mm.
- 51532 U. S. N. M. Albatross Collection 3927. Length 24 to 33 mm.
2 examples.
- 51533 U. S. N. M. Albatross Collection 3878. Length 24 to 36 mm.
5 examples.
- 51534 U. S. N. M. Albatross Collection 4188. Length 34 to 46 mm.
9 examples.
- 51535 U. S. N. M. Albatross Collection 4011. Length 28 to 30 mm.
3 examples.
- 51536 U. S. N. M. Off south coast of Molokai. Albatross Collection.
Length 77 mm. Type of Myctophum margaritatum.

74663 U. S. N. M. Albatross Collection 4921. Length 23 to 44 mm.
5 examples.

74664 U. S. N. M. Albatross Collection 5052. Length 41 to 56 mm.
6 examples.

74665 U. S. N. M. Albatross Collection 4927. Length 37 mm.

75775 U. S. N. M. Albatross Collection . Length 16 to 20 mm.
6 examples.

75776 U. S. N. M. N. $1^{\circ}45'$ W. $139^{\circ}36'$. September 9, 1899.
Length 22 to 26 mm. 3 examples.

75777 U. S. N. M. N. $10^{\circ}57'$ W. $137^{\circ}35'$. September 4, 1899.
Length 18 to 19 mm. 3 examples.

75778 U. S. N. M. Albatross Collection 4733. Length 53 mm.

75779 U. S. N. M. Albatross Collection 26. Length 19 mm.

75802 U. S. N. M. S. $14^{\circ}19'$ W. $98^{\circ}46'$. Albatross Collection 4706.
Length 26 mm. As Myctophum nitidulum.

92114 U. S. N. M. From Xiphias stomach in gully between Browns and
Georges Banks. Schooner "Eleanor". Captain Thomas Brigham. July 15 -
August 5, 1931. W. H. Rich. Length 96 mm.

A. N. S. P. N. $8^{\circ}37'$ W. 168° . Dr. W. H. Jones. Length 73 mm.

Myctophum punctatum Rafinesque

Myctophum punctatum RAFINESQUE, Ind. Ittiol. Sicil., 1810, pp. 35,

56, pl. 2, fig. 5. Sicily. --BONAPARTE, Iconogr. Fauna Italica,

Pesc. vol. 3, pt. 1, fasc. 27, 1840, description, pl., fig. 5 (Italy).

--GOODE and BEAN, Oceanic Ichth., 1895, p. 71, pl. 22, fig. 80

(Grand Bank; off Banquero; N. $44^{\circ}30'$ W. $54^{\circ}35'$; N. $38^{\circ}37'$ W. $73^{\circ}12'$,

224 fathoms; N. $39^{\circ}51'30''$ W. $70^{\circ}17'$, 571 fathoms; N. $39^{\circ}54'45''$

W. $69^{\circ}29'45''$, 250 fathoms, Messina). --BRAUER, Zool. Anzeiger,

vol. 28, No. 10, Dec. 20, 1904, p. 389 (diagnosis in key). --

FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1911 (1912), p. 570

(Italy; between Greenland and North America in Lat. N. 60°). --

WEBER, Siboga Exp., vol. 57, Fische, 1913, p. 86 (Banda Sea).

--WEBER and BEAUFORT, Fishes Indo Austral. Archipelago, vol. 2,

1913, p. 160, fig. 62 (tail) (WEBER'S material). --TAANING, Rep.

Danish Oceanogr. Exp. Mediterranean, No. 5, 1918, p. (10) 57,

figs. 19-20 (Mediterranean, Messina, Atlantic). --VAILLANT, Res.

Camp. Sci. Monaco, vol. 52, 1919, p. 130 (N. $46^{\circ}52'$ W. $50^{\circ}30'45''$;

N. $38^{\circ}17'$ W. $26^{\circ}46'45''$). --PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, Dec. 1928, p. 65 (compiled). --TAANING, Vidensk.

Medd. Dansk Naturh. Foren. København, vol. 86, 1928, p. 53 (diagnosis

in key). --FOWLER, Mem. Bishop Mus., vol. 10, 1928, p. 70 (compiled).

Mictophum punctatum BORODIN, Bull. Vanderbilt Oceanogr. Mus., vol. 1,

art. 1, 1928, p. 11 (Mediterranean Sea; error).

Myctophum (Myctophum) punctatum BRAUER, Deutsch. Tiefsee Exp. Valdivia,

vol. 15, Tiefsee-Fische, 1906, p. 188, text figs. 103-104 (compiled).

--ZUGMAYER, Rés. Camp. Sci. Monaco, vol. 35, 1911, p. 26, pl. 1,

fig. 7 (N. $36^{\circ}17'$ W. $1^{\circ}58'$, 1800 meters; N. $39^{\circ}32'$ E. $0^{\circ}20'$;

N. $39^{\circ}40'$ E. $5^{\circ}56'$). --MURRAY and HJORT, The Depths of the Ocean,

1912, p. 613 (off Morocco; off Cape Blanco; south of Azores; 214 to

2865 meters).

Scopelus punctatus HOLT and BYRNE, Dep. Agric. Techn. Instruct. Ireland,

Sci. Investig., 1910, No. 6 (1911), p. 18, fig. 4 (Irish Atlantic

Slope, 900 fathoms).

Scopelus caninianus VALENCIENNES, Hist. Nat. Poiss., vol. 22, 1849,

p. 445. Italy. --GÜNTHER, Cat. Fishes Brit. Mus., vol. 5, 1864,

p. 409 (no locality). --CANESTRINI, Fauna Italia, Pesci, 1874, p. 123

(Sicily). --GÜNTHER, Rep. Voy. Challenger, vol. 31, pt. 2, 1889, p. 30

(near New Guinea; passage to Admiralty Islands). --LÜTKEN, Vidensk.

Medd. Naturh. Foren. Kjöbenhavn, 1891, p. 207 (N. 59°37' W. 15°36';

Kon.
N. 57°31' W. 39°36');/Dansk. Vidensk. Selsk. Skrift. Kjöbenhavn,

ser. 6, vol. 7, No. 6, 1892, p. 251, fig. 9 (between New Guinea and

Admiralty Islands). --CARUS, Prodr. Fauna Medit., vol. 2, 1893, p. 363

(compiled). --COLLETT, Res. Camp. Sci. Monaco, vol. 10, 1896, p. 111

(Newfoundland Bank; Gulf of Gascony).

Scopelus heideri STEINDACHNER, Sitz.^{Ber.}/Akad. Wiss. Wien, Math.-nat.

Kl., vol. 83, pt. 1, 1881, p. 401. Messina.

Scopelus mulleri (not GMELIN) GOODE, Fisher. Industr. U. S. Nat. Hist.

Aquat. Animals, 1884, pl. 203 (figure to left).

Myctophum phengodes (not LÜTKEN) FOWLER, Proc. Acad. Nat. Sci. Phila-

delphia, 1901, p. 620 (between Greenland and North America).

Myctophum (Myctophum) phengodes BRAUER, Deutsch. Tiefsee Exp. Valdivia,

vol. 15, Tiefsee-Fische, 1906, p. 177 (part).

Stylophthalmus lobianco MAZZARELLI, Revist. Mens. Pesca, Paiva, vol. 5,

1910, p.

Depth 4 to $4 \frac{1}{3}$; head $3 \frac{1}{3}$ to $3 \frac{3}{5}$, width 2 to $2 \frac{1}{2}$. Snout 5 to 6 in head; eye $2 \frac{2}{5}$ to $2 \frac{7}{8}$, greater than snout or interorbital; maxillary reaches little beyond eye or not quite to nearly vertical hind preopercle edge, expansion $2 \frac{1}{2}$ to 3 in eye, length $1 \frac{2}{5}$ to $1 \frac{1}{2}$ in head; interorbital $2 \frac{3}{4}$ to 4, low. Gill rakers 6 or 7 + 17 to 19, $1 \frac{1}{3}$ in eye, gill filaments $\frac{1}{2}$ gill rakers.

Scales 41 or 42 in lateral line, not enlarged; 3 or 4 above, 4 or 5 below, 14 or 15 predorsal to occiput. Pectoral axil with pointed scale $2 \frac{1}{4}$ in fin. Small scales well out on caudal base. Scales with 4 basal radiating striae; circuli moderately fine, incomplete apically.

Two small antorbital photophores, one superior and other inferior on front eye edge; 2 operculars, upper larger and level with lower eye edge and lower subpectoral; 3 equidistant veiled branchiostegals; 5 pectorals, third interspace shortest and first longest; 1 suprapectoral, little nearer lateral line than pectoral fin origin, from which advanced until nearly opposite second pectoral; 2 subpectorals, lower little before suprapectoral and opposite second pectoral or nearer second pectoral than upper subpectoral, which close below and before bases of lowest pectoral rays; 4 ventrals, equidistant (variably first on left side double); 1 suprapectoral, over ventral base midway between latter and lateral line; 8 or 9 + 8 or 9 anals, most of posteroanals behind anal fin base; 3 supraanals form slightly curved to straight inclined series with first or lowest well above or little before last ventral, second little higher and posterior to first, third opposite anal fin origin close below lateral line; 1 posterolateral, little before or over last anteroanal close below lateral line; 2 precaudals, close together, posterior slightly higher. Two to 6 supracaudal luminous scales in male, female with 3 or 4 infracaudal.

D. II, 8, I to II, 10, I, first branched rays, $1\frac{1}{5}$ to $1\frac{1}{3}$ in total head length; adipose fin $4\frac{3}{4}$; A. III, 14, I to III, 19, I, first branched ray $1\frac{1}{2}$ to $1\frac{3}{4}$; caudal $1\frac{3}{5}$, forked; least depth of caudal peduncle $2\frac{2}{3}$ to $3\frac{1}{8}$; pectoral $1\frac{1}{4}$ to $1\frac{1}{2}$?; ventral $1\frac{4}{5}$ to $2\frac{1}{8}$?

Dull brown on skin where scales have fallen. Silvery white scales, especially below, with iridescent reflections. Iris white. Fins uniformly pale.

3 examples U. S. N. M. Exhibited at World's Fair, Chicago. Length 65 to 89 mm. 3 examples.

23369 U. S. N. M. Grand Bank. Schooner "Lizzie". No. 188. Length 64 to 88 mm. 2 examples.

23756 U. S. N. M. Grand Bank. Washed aboard schooner "Conductor". Lot. 587. 1879. Length 93 mm.

24530 U. S. N. M. N. 43° W. $54^{\circ}30'$. Washed aboard schooner "David A. Story". January 1880. Length 77 mm.

24646 U. S. N. M. Grand Bank. Ft. Clark. Length 88 mm.

24647 U. S. N. M. Grand Bank. Washed aboard "Plymouth Rock". January 20, 1888. Lot. 608. Length 86 mm.

24648 U. S. N. M. Grand Bank. Ft. Clark. Length 77 mm.

28999 U. S. N. M. U. S. Bur. Fisheries. Length 53 to 56 mm. 3 examples.

29982 U. S. N. M. North west part of Grand Bank. J. Petersen. Length 92 to 93 mm. 2 examples.

35696 U. S. N. M. N. $39^{\circ}54'45''$ W. $69^{\circ}29'48''$. Albatross Collection. Length 62 mm.

40057 U. S. N. M. Messina, Italy. Royal Zoological Museum of Florence. Length 68 to 79 mm. 8 examples.

43781 U. S. N. M. N. $44^{\circ}30'$ W. $54^{\circ}35'$. Gloucester Fleet. No. 283. Length 90 mm.

43782 U. S. N. M. Banquereau. Gloucester Fleet. Length 97 mm.

43783 U. S. N. M. No. 68. Length 61 mm.

43787 U. S. N. M. Gloucester Fleet No. 284. Length 92 mm.

43788 U. S. N. M. Gloucester Fleet. Length 89 to 100 mm.

3 examples.

44519 U. S. N. M. N. 42° W. 63° . Gloucester Donation

256. Length 62 to 98 mm. 4 examples.

44520 U. S. N. M. N. 44° W. 53° . Gloucester Donation 268.

Length 84 and 85 mm. 2 examples.

48851 U. S. N. M. Le Have Bank. 1888. Schooner "Sarah M. Jacobs".

In very poor preservation, average 60 mm. 35 specimens.

49357 U. S. N. M. Messina, Italy. M. Bellotti. Length 52 to 78 mm.

5 examples.

53482 U. S. N. M. Albatross Collection 2711. Length 23 mm.

72469 U. S. N. M. N. $38^{\circ}29'$ W. $71^{\circ}58'$. Albatross Collection 2719.

Length 40 mm.

76286 U. S. N. M. No. 68. Length 50 mm.

82126 U. S. N. M. Edge of St. Peter's Bank. Schooner "Epes Tarr".

June 16, 1880. Gloucester Donation 739. Length 90 mm.

82241 U. S. N. M. N. $43^{\circ}25'$ W. $61^{\circ}25'$, washed aboard during a

storm. Schooner "Alice M. Williams". Gloucester Donation 263.

Length mm.

91844 U. S. N. M. N. $39^{\circ}28'$ W. $71^{\circ}23'30''$. Albatross Collection

Length 38 to 43 mm. 8 examples.

Myctophum phengodes (Lütken)

Scopelus phengodes LÜTKEN, Kon. Dansk. Vidensk. Selsk. Skrift.

Kjöbenhavn, ser. 6, vol. 7, No 6, 1892, p. 253, fig. 11.

S. 25°50' E. 102°50'; S. 31°30' W. 19°30'; S. 33°30' W. 11°;

S. 34°20' W. 5°30'; S. 40°4' E. 53°20'; S. 39°54' E. 41°30';

S. 37°30' E. 10°40'; S. 33°40' to 34°40' E. 32°30' to 27°;

S. 30°12' E. 44°; S. 27°30' to 29°40' E. 98° to 96°20';

S. 22°40' E. 81°50'.

Myctophum phengodes GOODE and BEAN, Oceanic Ichth., 1895, p. 73

(compiled). --WAITE, Records Australian Mus., vol. 5, pt. 3,

1904, p. 152 (Lord Howe Island). --PARR, Bull. Bingham Oceanogr.

Collection, vol. 3, art. 3, December 1928, p. 66 (compiled). --

NORMAN, Discovery Rep., vol. 2, 1930, p. 326 (S. 33°53'45"

E. 9°26'30", 1000 meters).

Myctophum (Myctophum) phengodes BRAUER, Deutsch. Tiefsee Exp. Valdivia,

vol. 15, Tiefsee-Fische, 1906, p. 177, fig. 88 (S. 33° W. 30°;

Zanzibar; S. 26°3'6" E. 93°43'7"). --ZUGMAYER, Res. Camp. Sci.

Monaco, vol. 35, 1911, p. 22 (between Azores and Spain N. 43°

W. 19° at surface).

Depth $3 \frac{9}{10}$; head $3 \frac{1}{4}$. Snout $5 \frac{4}{5}$ in head; eye 3, greatly exceeds snout; maxillary reaches very slightly behind eye, expansion 4 in eye, length from snout tip $1 \frac{2}{3}$ in head; interorbital rather low.

Scales cycloid, 38 in lateral line.

Two small antorbital photophores, upper well superior on front eye edge, lower at lower front eye edge; 2 operculars, upper larger and level with lower eye edge; 3 branchiostegals; 5 pectorals, first and second interspaces subequally longest; 1 suprapectoral, slightly nearer lateral line than pectoral fin origin; 2 subpectorals, first lower or level with lower opercular above and posterior to second pectoral, upper little before third pectoral close before bases of lowermost pectoral rays; 4 ventrals, equidistant; 1 supraventral, slightly nearer lateral line than ventral origin; anals 6 or 7 + 7 to 9, level, last 3 posteroanals behind anal fin base; 3 supraanals in inclined line, equidistant, lowest little before and above fourth ventral, median level with supraventral over vent, uppermost close below lateral line opposite anal origin; 1 posterolateral, close below lateral line, over and little posterior from last anteroanal; 2 separated precaudals, first low or close above front rudimentary caudal rays, upper close below end of lateral line.

D. III, 10, first branched ray $1 \frac{3}{5}$ in head; adipose fin $3 \frac{3}{5}$;
 A. III, 17, first branched ray $2 \frac{1}{8}$; caudal $1 \frac{1}{5}$, deeply emarginate;
 least depth of caudal peduncle $3 \frac{7}{8}$; pectoral $1 \frac{1}{4}$; ventral $2 \frac{2}{5}$,
 inserted below dorsal origin.

Length 23 mm.

(Brauer).

Atlantic, Indian and Pacific Oceans.

Myctophum parvimanum (Günther)

Scopelus parvimanus GÜNTHER, Cat. Fish. Brit. Mus., vol. 5, 1864,

p. 406. South Sea. --HUTTON, Trans. New Zealand Institute,

vol. 5, 1872 (1873), p. 269, pl. 15, fig. 90a (Cape Campbell).

Myctophum parvimanum NORMAN, Ann. Mag. Nat. Hist., ser. 10, vol. 4,

Nov. 1929, p. 514, fig. 3 (type).

Depth $4 \frac{2}{5}$; head $3 \frac{2}{5}$. Snout 6 in head; eye $2 \frac{1}{2}$, greatly exceeds
 snout; maxillary extends $\frac{1}{4}$ eye diameter beyond eye, expansion 2 in eye,
 reaches little beyond preopercle edge, length $1 \frac{2}{5}$ in head; interorbital
 low, eye impinging little on upper profile.

Scales cycloid, 35 in lateral line.

One opercular photophore close above level of upper maxillary edge; 3 branchiostegals; 5 pectorals, first and second closer than others which equidistant; 1 suprapectoral, rather close above and before pectoral fin origin, nearly over third pectoral; apparently 1 subpectoral, slightly before third pectoral and little lower than opercular; 4 ventrals, second little elevated; 1 supraventral, equidistant between lateral line and ventral base; anals 6 + 6, level, 4 or 5 posteroanals behind anal fin base; 3 supraanals, nearly in straight line but slightly elevated posteriorly from horizontal, first spot slightly below level of supraventral and above posteriorly second ventral, second spot slightly above level of supraventral and behind third ventral, uppermost spot close below lateral line above and posterior to first anal; 1 posterolateral close below lateral line, above and close behind last anteroanal; 2 wide set precaudals, lower close above front lower rudimentary caudal rays, upper rather close below end of lateral line.

D. 13, inserted midway between snout tip and caudal base, well behind ventral origin; adipose fin $3 \frac{1}{5}$ in head; A. 19, origin below middle of dorsal base; caudal emarginate; pectoral $2 \frac{2}{5}$ in head; ventral 2.

Length 62 mm.

(Norman).

New Zealand Seas.

Myctophum benoisti (Cocco)

Scopelus benoisti COCCO, Nuovi Ann. Sci. Nat. Bologna, vol. 2, 1838,

p. 172, pl. 6, fig. 4. Messina. --BONAPARTE, Iconogr. Fauna Italica,

Pesc., pt. 2, fasc. 27, 1840, pl., fig. 4.

Scopelus benoiti BONAPARTE, Iconogr. Fauna Italica, Pesc., pt. 2, fasc. 27,

no pagination (Sicily). --GÜNTHER, Cat. Fishes Brit. Mus., vol. 5,

1864, p. 406 (Mediterranean; Messina). --CANESTRINI, Fauna Italia,

Pesci, 1874, p. 123 (Sicily, Nice). --LÜTKEN, Kon. Dansk. Vidensk.

Selsk. Skrift. Kjöbenhavn, ser. 6, vol. 7, 1892, p. 256, fig. 14

(N. $34^{\circ}40'$ W. $24^{\circ}20'$; N. 41° W. $34'$). --CARUS, Prodr. Fauna Medit.,

vol. 2, 1893, p. 564 (compiled). --OSORIO, Journ. Math. Sci. Acad.

Lisboa, ser. 2, vol. 3, Aug. 1893, p. 140 (St. Thomas, West Africa).

Myctophum benoiti GOODE and BEAN, Oceanic Ichth., 1895, p. 74, pl. 22,

fig. 83 (Messina). --BRAUER, Zool. Anzeiger, vol. 28, Nr. 10,

Dec. 20, 1904, p. 388 (diagnosis in key). --REGAN, Fishes Brit.

Antarctic "Terra Nova" Exp., Nat. Hist. Rep. Zool., vol. 1, No. 4,

1916, p. 139, pl. 6, figs. 1-2 (S. $35^{\circ}29'$ W. $50^{\circ}26'$, 2 meters). --

TAANING, Rep. Danish Oceanogr. Exp. Medit., No. 5, vol. 2, A. 7,

1918, p. 45, figs. 15-16 (Mediterranean, Messina, Sea of Marmora). --

PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928,

p. 66 (compiled). --TAANING, Vidensk. Dansk Naturh. Foren. København,

vol. 86, 1928, p. 57 (diagnosis in key).

Myctophum (Myctophum) benoiti BRAUER, Deutsch. Tiefsee Exp. Valdivia,

vol. 15, Tiefsee-Fische, 1906, p. 183, text fig. 95 (N. $31^{\circ}59'3''$

W. $15^{\circ}5'$, Madeira; N. $24^{\circ}43'4''$ W. $17^{\circ}1'3''$, south of Canaries;

N. $22^{\circ}57'3''$ W. $18^{\circ}33'4''$; S. $3^{\circ}55''$ E. $7^{\circ}48'5''$, Gulf of Guinea). --

ZUGMAYER, Rés. Camp. Sci. Monaco, vol. 35, 1911, p. 25 (N. $33^{\circ}3'$

W. $41^{\circ}8'$, 3000 meters; N. $36^{\circ}51'30''$ W. $1^{\circ}30'$, 1300 meters). --

MURRAY and HJORT, The Depths of the Ocean, 1912, p. 613 (off Morocco).

Scopelus humboldti (not RISSO) MOREAU, Poiss. France, vol. 3, 1881, p. 505

(compiled).

Depth 3 to $4 \frac{2}{5}$; head 3 to $3 \frac{1}{4}$, width $2 \frac{1}{3}$ to $2 \frac{2}{5}$. Snout $4 \frac{2}{3}$ to $5 \frac{1}{4}$ in head from snout tip; eye $2 \frac{1}{5}$ to $2 \frac{3}{4}$, twice snout, nearly twice interorbital; maxillary reaches little beyond eye though not to little inclined hind preopercle edge, expansion $2 \frac{1}{5}$ to $2 \frac{3}{4}$ in eye, length $1 \frac{2}{5}$ to $1 \frac{1}{2}$ in head from snout tip; interorbital $4 \frac{1}{4}$ to 5, low, eyes nearly or quite impinging on upper profile of head. Gill rakers 5 + 17, lanceolate, length $\frac{3}{4}$ of eye, nearly twice gill filaments.

Scales 38 or 39 in lateral line; 4 above, 4 below, 12 or 13 predorsal. Scales very caducous, mostly fallen.

Two small antorbital photophores, upper well above level of upper pupil edge and lower well below lower pupil edge; small postorbital at upper hind eye edge, not evident in most my examples; 2 operculars, upper little larger and in line with lower eye edge and lower subpectoral; 3 veiled branchiostegals, equidistant or median nearer rictus; 5 pectorals, second interspace longest and third shortest; 1 suprapectoral, above pectoral fin origin and midway between same and lateral line or little behind lower subpectoral; 2 subpectorals, first or lower below upper or slightly posterior to second pectoral photophore, upper close before and below lowest pectoral ray bases; 4 ventrals, equidistant; 1 supraventral, level with upper opercular and above ventral fin origin; 5 to 7 + 5 to 7 anals, last 3 or 4 posteroanals behind ventral fin base; 3 supraanals, first or lowest level with lower or front subpectoral and slightly before third ventral, second slightly higher or about level with upper or second subpectoral and opposite anal fin origin, uppermost or third on lateral line little before first anteroanal; 2 posterolaterals, first little nearer and posterior to last anteroanal, upper on lateral line; 2 pre-caudals, close together, posterior little higher. Male with supracaudal luminous plate, female with 2 to 4 smaller infracaudal luminous scales.

D. IV, 8, I, first branched ray $1 \frac{2}{3}$ to 2 in total head length; adipose fin $2 \frac{7}{8}$ to $3 \frac{1}{3}$; A. III, 14, I or III, 15, I, first branched ray $1 \frac{3}{5}$ to 2; caudal $1 \frac{1}{10}$?, well forked; least depth of caudal peduncle 3 to $3 \frac{1}{10}$; pectoral $1 \frac{1}{5}$ to $1 \frac{1}{4}$; reaches anal origin; ventral 2 to $2 \frac{1}{4}$.

Brown, with silvery reflections on scales. Fins pale.

Atlantic and Antarctic Oceans. Taaning gives still further variation for the anal photophores, as 4 + 8. His figures show the metamorphosis of the larva to the adult. The vertebrae were found to be 35 to 37 in the adults, of which 15 lumbar and 21 caudal.

10163 U. S. N. M. Italy. Bonaparte Collection. Academy of Natural Sciences of Philadelphia. Length 52 to 54 mm. 3 examples.

28433 U. S. N. M. Italy. Italian Commission. Gravid female. Length 65 mm.

40063 U. S. N. M. Italy. Florence Museum. Length 24 to 53 mm. 9 examples.

49355 U. S. N. M. Messina. M. Bellotti. Length 44 to 55 mm. 5 examples.

Myctophum reinhardtii (Lütken)

Scopelus reinhardtii LÜTKEN, Kon. Dansk. Vidensk. Selsk. Skrift.

Kjöbenhavn, ser. 6, vol. 7, No. 6, 1892, p. 257, fig. 16.

N. Lat. $34^{\circ}22'$ W. Long. $18^{\circ}10'$, Atlantic (designated type by

GILBERT).

Myctophum reinhardtii GOODE and BEAN, Oceanic Ichth., 1895, p. 74

(compiled). --WAITE, Records Australian Mus., vol. 5, pt. 3,

1904, p. 154 (Lord Howe Island).

Myctophum reinhardtii GILBERT, Mem. Mus. Comp. Zool., vol. 26,

No. 6, 1908, p. 219 (N. Lat. $1^{\circ}45'$ W. Long. $137^{\circ}36'$); Mem.

Carnegie Mus., vol. 6, No. 2, August 1913, p. 80 (off Japan). --

JORDAN and JORDAN, Mem. Carnegie Mus., vol. 10, No. 1, Dec. 1922,

p. 11 (reference). --TAANING, Vidensk. Medd. Dansk Naturh. Foren.

Köbenhavn, vol. 86, 1928, p. 57 (diagnosis in key). --PARR, Bull.

Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 66

(compiled). --FOWLER, Mem. Bishop Mus., vol. 10, 1928, p. 70

(compiled). --PARR, Proc. U. S. Nat. Mus., vol. 76, 1929, p. 12

type of Myctophum braueri).

Myctophum (Myctophum) reinhardti BRAUER, Deutsch. Tiefsee Exp.

Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 185, text. figs.

96 to 101 (N. $24^{\circ}43'4''$ W. $17^{\circ}1'3''$, south of Canaries; N. $8^{\circ}58'$

W. $16^{\circ}27'9''$, Sierra Leone; N. $1^{\circ}27'8''$ W. $10^{\circ}16'5''$; N. $0^{\circ}26'3''$

W. $6^{\circ}32'$, Gulf of Guinea; N. $1^{\circ}51'$ E. $0^{\circ}31'2''$; N. $2^{\circ}36'5''$

E. $3^{\circ}27'5''$; S. $3^{\circ}55'$ E. $7^{\circ}48'5''$; S. $5^{\circ}6'2''$ E. $9^{\circ}58'6''$;

S. $11^{\circ}28'$ E. $10^{\circ}24'$, off South west Africa; S. $31^{\circ}21'1''$ E. $9^{\circ}45'9''$;

N. $7^{\circ}43'2''$ E. $88^{\circ}44'9''$, Bay of Bengal; N. $4^{\circ}56'$ E. $78^{\circ}15'3''$,

between Ceylon and Chagos; S. $4^{\circ}5'8''$ E. $73^{\circ}24'8''$; S. $6^{\circ}19'3''$

E. $73^{\circ}18'9''$; N. $4^{\circ}5'8''$ E. $70^{\circ}1'9''$, between Chagos and Seychelles;

S. $2^{\circ}38'7''$ E. $65^{\circ}59'2''$; S. $3^{\circ}24'6''$ E. $58^{\circ}38'1''$; S. $3^{\circ}26'2''$

E. $58^{\circ}34'2''$; S. $4^{\circ}45'$ E. $48^{\circ}58'6''$, between Seychelles and Zanzibar;

N. $9^{\circ}6'1''$ E. $53^{\circ}41'2''$, south of Sokotra; N. $13^{\circ}2'8''$ E. $46^{\circ}41'6''$,

Gulf of Aden; S. 30° W. 84° , off western Chili; S. 31° W. 74°).

Myctophum benoiti reinhardti BRAUER, Zool. Anzeiger, vol. 28, Nr. 10,

Dec. 20, 1904, p. 388 (diagnosis in key). --WEBER, Siboga Exp.,

vol. 57, Fische, 1913, p. 86 (Molucca Passage; Halmahera Sea;

Banda Sea; 1000 to 1500 meters).

Myctophum benoiti var. reinhardti WEBER and BEAUFORT, Fishes Indo

Austral. Archipelago, vol. 2, 1913, p. 155, fig. 60 (photophores)

(WEBER'S materials).

Myctophum (Myctophum) benoiti reinhardti PAPPENHEIM, Deutsch. Südpolar

Exp., vol. 15, Zool.^{pt.} 7, 1914, p. 193 (S. 23°33' W. 20°51', 3000

meters; S. 30°21' W. 14°2', 10 meters; N. 17°18' W. 24°58', 3000

meters; N. 0°46' W. 18°59', 3000 meters; N. 5°27' W. 21°41', 800

to 1500 meters; N. 17°28' W. 29°42', 3000 meters; S. 8°43' W. 11°55',

3000 meters).

Myctophum (Myctophum) benoti var. reinhardti BARNHARD, Ann. South

African Mus., vol. 21, pt. 1, June 1925, p. 242 (off Cape Point

and south of Agulhas Bank, 200 fathoms).

Myctophum atratum GARMAN, Mem. Mus. Comp. Zool., vol. 24, 1899,

p. 268. N. $25^{\circ}26'15''$ W. $109^{\circ}48'$, 1218 fathoms, west coast Mexico.

Myctophum braueri (not LÖNNBERG 1905) GILBERT, Bull. U. S. Fish

Comm., vol. , pt. 2, 1903 (1905), p.

Myctophum luetkeni (not BRAUER) GILBERT, Bull. U. S. Fish Comm.,

vol. 23, pt. 2, 1903 (1905), pl. 70, fig. 1 (legend erroneous).

Depth $4 \frac{1}{4}$ to $4 \frac{1}{2}$; head $3 \frac{1}{3}$ to $3 \frac{1}{2}$, width 2 to $2 \frac{1}{4}$.

Snout 5 to $5 \frac{3}{4}$ in head from snout tip; eye $2 \frac{2}{5}$ to $2 \frac{2}{3}$, greater than snout or interorbital; maxillary reaches little or but slightly behind eye, but not quite to vertical hind preopercle edge, expansion $2 \frac{1}{4}$ to $2 \frac{1}{2}$ in eye, length $1 \frac{1}{2}$ to $1 \frac{3}{5}$ in head from snout tip; interorbital $3 \frac{1}{3}$ to $3 \frac{2}{3}$, concave to nearly level. Gill rakers $6 + 14$, lanceolate, $\frac{1}{2}$ of eye; gill filaments $\frac{1}{3}$ of eye.

Scales 38 or 39 in lateral line, not enlarged; 3 above, 4 or 5 below, 12 predorsal to occiput. Caudal base scaly. Scales very caducous, most all fallen. Scales with 7 basal radiating striae; circuli rather fine, more or less complete.

Small lower antorbital photophore, sometimes also an upper well superior; 2 operculars, upper larger and in line inclined from lower eye edge to lower subpectoral; 3 equidistant veiled branchiostegals; 5 pectorals, with third interspace shortest and first and second subequally longest; 1 suprapectoral, before pectoral fin origin and midway between same and lateral line; 2 subpectorals, first or lower slightly before suprapectoral or over second pectoral, upper close before lowest pectoral ray bases; 4 equidistant ventrals; 1 supraventral over ventral origin and nearly midway between latter and lateral line; $6 + 7$ or 8 anals, at least half of posteroanals over anal fin base; 3 supraanals, first lowest or distinctly lower than supraventral or just above lowest third of space below lateral line and behind second ventral, second over or little behind last ventral and level with supraventral and third on lateral line over or little before first anteroanal; 2 posterolaterals, lower before, over or little behind last anteroanal and upper on lateral line over break in anal series; 2 wide set precaudals, lower near lower edge of tail and upper posterior on or below lateral line at caudal base. Male with 4 to 6 supracaudal luminous scales, female with 1 to 3 infracaudal.

D. III, 8, I or III, 9, I, first branched ray $1 \frac{1}{5}$ to $1 \frac{1}{2}$ in total head length; adipose fin $3 \frac{1}{8}$ to $3 \frac{4}{5}$; A. III, 16, I to III, 19, I, first branched ray $1 \frac{4}{5}$ to 2; caudal $1 \frac{1}{3}$?, well emarginate; least depth of caudal peduncle $3 \frac{1}{2}$ to $3 \frac{7}{8}$; pectoral 1 to $1 \frac{1}{6}$; ventral 2 to $2 \frac{1}{3}$.

Brownish to dusky where denuded of scales. Body about fin bases deep brown to blackish. Sides of head and adherent scales silvery, with iridescent reflections. Fins all pale brown to whitish. Iris silvery white, gray in preserved specimens.

Atlantic, Indian and Pacific Oceans. Compared with Brauer's figure 90 most of my specimens show the suprapectoral photophore, the second or median supraanal and first or lower posterolateral at the same level. Brauer shows the first 2 anals and first posterolateral level.

Although Parr gives "East Indian waters" in his distribution for Myctophum benoisti (Cocco), evidently from Weber and Beaufort's 1913 account, their material is clearly Myctophum reinhardti (Lütken), with which they identify it. This is evident from Parr's 'key' in which the chief character of distinction is given as "Last Prc. (precaudal) about midway between lateral line and ventral outline of tail or lower" in Myctophum benoisti. Weber and Beaufort give for their M. benoiti var. reinhardti as "distant from the latter group (anals) but at the lower profile is the anterior Prc., the posterior high up in the lateral line".

D. 4640.

Length 45 to 60 mm. 8 examples.

D. 5195. Capitancillo Island Light, N. 11.75 miles (N. $10^{\circ}47'$

E. $124^{\circ}6'30''$), off northern Cebu. April 3, 1908. Length 16 to 26 mm.
92 examples.

D. 5196. Capitancillo Light, N. $5^{\circ}30'$ W., 14.30 miles (N. $10^{\circ}44'30''$

E. $124^{\circ}7'30''$), off northern Cebu. April 3, 1908. Length 18 to 24 mm.
2 examples.

D. 5176. Escarceo Light, S. 57° E., 7 miles (N. $13^{\circ}35'15''$ E. $120^{\circ}53'20''$),
Verde Island Passage, in 260 fathoms. March 24, 1908. Length 19
to 22 mm. 3 examples.

D. 5437. Hermana Mayor Light, N. 69° E., 4.9 miles (N. $15^{\circ}45'54''$
E. $119^{\circ}42'45''$), west coast of Luzon. May 8, 1909. Length 18 mm.

D. 5258. Juraojurao Island (S.), S. 75° W., 16.25 miles
(N. $10^{\circ}27'45''$ E. $122^{\circ}12'30''$), off southern Panay. June 2, 1908.
Length 22 to 24 mm. 6 examples.

D. 5653. Lamulu, S. 40° E., 18 miles (S. $4^{\circ}27'36''$ E. $121^{\circ}16'36''$),
Gulf of Boni, Celebes. December 17, 1909. Length 14 to 25 mm.
14 examples.

D. 5232. Limasaua Island (S.), S. 69° E., 20.60 miles (N. $10^{\circ}00'45''$
E. $124^{\circ}44'06''$), between Bohol and Leyte. May 7, 1908. Length 16 mm.

D. 5186. Lusaran Light, N. 20° E., 37.80 miles (N. $9^{\circ}53'30''$
E. $122^{\circ}15'30''$), between Panay and Negros. March 30, 1908. Length 20 mm.

D. 5669. Mamuju Island (E.), S. 14° E., 18.50 miles (S. $2^{\circ}19'30''$
E. $118^{\circ}50'00''$), Macassar Strait. December 29, 1909. Length 20 mm.

- D. 5125. Nogas Island (W.), S. 11° E., 24 miles (N. $10^{\circ}48'$ E. $121^{\circ}48'30''$), Sulu Sea vicinity southern Panay. In 411 fathoms. February 3, 1908. Length 14 to 25 mm. 3 examples.
- D. 5227. Point Origon, S. 44° E., 18.30 miles (N. $12^{\circ}53'45''$ E. $121^{\circ}52'30''$), east of Mindoro. In 322 fathoms. May 5, 1908. Length 21 to 50 mm. 4 examples.
- D. 5180. Romblon Light, N. $6^{\circ}30'$ E., 7.10 miles (N. $12^{\circ}28'30''$ E. $122^{\circ}15'$), vicinity of Romblon. March 26, 1908. Length 45 to 60 mm. 8 examples.
- D. 5228. Romblon Light, N. 3° E., 6.25 miles (N. $12^{\circ}29'30''$ E. $122^{\circ}15'45''$), south of Romblon. May 5, 1908. Length 22 to 34 mm. 21 examples.
- D. 5120. Sombero Island, S. $79^{\circ}30'$ E., 19.2 miles (N. $13^{\circ}45'30''$ E. $120^{\circ}30'15''$), Balayan Bay and Verde Island Passage. In 393 fathoms. January 21, 1908. Length 14 mm.
- 51525 U. S. N. M. Albatross Collection (3878). Length 22 to 50 mm. 3 examples.
- 51526 U. S. N. M. Albatross Collection (4145). Length 47 mm.
- 51527 U. S. N. M. Albatross Collection (3980). Length 57 mm.
- Type of Myctophum braueri.
- 51537 U. S. N. M. Albatross Collection (3927). Length 22 to 30 mm. 5 examples.
- 74659 U. S. N. M. Albatross Collection (4954). Length 22 mm.

74660 U. S. N. M. Albatross Collection (4955). Length 26 mm.

75792 U. S. N. M. Albatross Collection . Length 14 to 16 mm.

5 examples.

75793 U. S. N. M. Albatross Collection (3878. Length 16 mm.

1 example. A. N. S. P. S. 20° W. 75°. Dr. Benjamin Sharp. Length 31 mm.

Myctophum macrochir (Günther)

Scopelus macrochir GÜNTHER, Cat. Fishes Brit. Mus., vol. 5, 1864,

p. 408. No locality (Old collection; Haslar Collection).

Myctophum macrochir TAANING, Vidensk. Medd. Dansk Naturh. Foren.

København, vol. 86, 1928, p. 57 (diagnosis in key). --PARR, Bull.

Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. (67)

74, fig. 10 (N. 21° to 23° W. 71° to 77°; off west Cocos Island);

Proc. U. S. Nat. Mus., vol. 76, 1929, p. 25 (note). --NORMAN,

Discovery Rep., vol. 2, 1930, p. 326 (S. 43°20' W. 46°2', 2000

meters; S. 00°46' E. 5°49'15"; 850 to 950 meters; S. 2°49'30"

W. 9°25'30", 800 to 1000 meters; N. 3°4'45" W. 16°52', 132 meters;

N. 12°8' W. 20°53'30", 200 to 300 meters; N. 6°55' W. 15°54', 800

meters).

Lampanyctus alatus (not GOODE and BEAN) BREEDER, Bull. Bingham

Oceanogr. Collection, vol. 1, art. 1, 1927, p. 17 (part).

Depth 4; head $3 \frac{1}{4}$. Snout 6 in head from snout tip; eye $2 \frac{4}{5}$, greatly exceeds snout; maxillary extends barely $\frac{1}{4}$ eye diameter behind eye, apparently behind nearly vertical preopercle edge, length $1 \frac{3}{5}$ in head from snout tip; interorbital low, eye impinging on upper profile.

Scales in lateral line 31, somewhat enlarged.

Apparently a single opercular photophore level with upper subpectoral; 3 branchiostegals; 5 pectorals, second interspace longest, first but little shorter; 1 suprapectoral, over second pectoral about level with eye center well below lateral line; 2 subpectorals, first or anterior much below upper though nearly equidistant from second pectoral, also directly over second pectoral; 4 ventrals, equidistant; 1 supraventral, midway between ventral base and lateral line; anals 5 or 6 + 4 or 5, last 2 posteroanals behind anal fin base; 3 supraanals, lowest over interspace between third and fourth ventral, median little higher though not quite high as upper subpectoral but before uppermost which close below lateral line and little before first anteroanal; 2 posterolaterals, first or lower directly above last anteroanal; 2 precaudals, first close above lower rudimentary rays and second close below end of lateral line. Supracaudal luminous plates 4.

D. 13, fin height $1 \frac{7}{8}$ in total head length; A. 21, begins opposite last fourth of dorsal base, fin height $2 \frac{1}{10}$; caudal $1 \frac{1}{5}$; least depth of caudal peduncle 3; pectoral 1, reaches beyond anal origin; ventral $2 \frac{3}{4}$.

Length 63 mm. (Günther, Parr.)

Atlantic Ocean.

Myctophum hygomi (Lütken)

Scopelus hygomi LÜTKEN, Kon. Dansk. Vidensk. Selsk. Skrift.

Kjöbenhavn, ser. 6, vol. 7, 1892, p. 256, fig. 15. N. 38°

W. $22^{\circ}20'$; S. $35^{\circ}12'$ E. 26° ; N. $23^{\circ}30'$ E. 81° ; S. $24^{\circ}30'$

E. $75^{\circ}50'$; S. $39^{\circ}54'$ E. $41^{\circ}30'$.

Myctophum hygomi GOODE and BEAN, Oceanic Ichth., 1895, p. 75

(compiled). --JORDAN and EVERMANN, Bull. U. S. Nat. Mus., No. 47,

pt. 1, 1896, p. 573 (compiled). --WAITE, Records Australian

Mus., vol. 5, pt. 3, 1904, p. 153 (Lord Howe Island).

Myctophum hygomi TAANING, Rep. Danish Oceanogr. Exp., No. 5, vol. 2,

A. 7, 1918, p. 51, figs. 17-18 (Mediterranean; Atlantic);

Vidensk. Medd. Dansk Naturh. Foren. Kjöbenhavn, vol. 86, 1928,

p. 57 (diagnosis in key). --PARR, Bull. Bingham Oceanogr.

Collection, vol. 3, art. 3, Dec. 1928, p. (67) 76 (N. 23° to 32°

W. 64° to 77° , 4000 to 8000 feet); Proc. U. S. Nat. Mus.,

vol. 76, art. 10, 1929, p. 12 (type of Myctophum remiger).

Myctophum benoiti hygomi BRAUER, Zool. Anzeiger, vol. 28, Nr. 10,

Dec. 20, 1904, p. 389 (diagnosis in key).

Myctophum (Myctophum) benoiti hygomi BRAUER, Deutsch. Tiefsee Exp.

Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 187, text fig. 102

(LÜTKEN'S example). --MURRAY and HJORT, The Depths of the Ocean,

1912, p. 613 (off Morocco; west of Canaries).

Myctophum remiger GOODE and BEAN, Oceanic Ichth., 1895, p. 74, pl. 22,

fig. 84. West Atlantic and Gulf Stream, to 1641 fathoms.

Depth $3 \frac{4}{5}$ to 4; head 3 to $3 \frac{1}{2}$, width $1 \frac{4}{5}$ to $1 \frac{7}{8}$. Snout $4 \frac{4}{5}$ to $5 \frac{1}{2}$ in head from snout tip; eye $2 \frac{1}{3}$ to $2 \frac{1}{2}$, greater than snout or interorbital; maxillary reaches little beyond eye but not to nearly vertical hind preopercle edge, expansion 2 to $2 \frac{1}{2}$ in eye, length $1 \frac{2}{5}$ to $1 \frac{1}{2}$ in head from snout tip; interorbital 4 to $4 \frac{1}{8}$, level. Gill rakers 5 + 17 or 18, lanceolate, $1 \frac{4}{5}$ in eye, nearly twice gill filaments.

Scales 37 to 39 in lateral line; 3 above, 3 or 4 below, 15 or 16 predorsal. Small pointed scale in ventral fin axil. Scales with 3 basal radiating striae; circuli rather fine, obsolete apically.

Small upper and lower antorbital photophore; 2 operculars, upper larger and level with lower eye edge; 3 equidistant veiled branchiostegals; 5 pectorals, third interspace shortest; 1 suprapectoral little before and close above pectoral origin, over lower subpectoral; 2 subpectorals, first or lower much nearer upper than first pectoral spot or nearly over second pectoral spot, upper close before bases of lowest pectoral fin rays; 4 ventrals, equidistant; 1 supraventral, on lateral line opposite ventral base; 6 or 7 + 6 or 7 anals, most posteroanals posteriorly behind ventral fin base; 3 supraanals, anterior lowest or ~~over~~ interspace between first and second ventrals, second about midway and little behind last ventral and lateral line, uppermost on lateral line opposite first anteroanal; 2 mediolaterals anterior over or behind penultimate anterolateral and posterior on or close below lateral line little before first posteroanal; 2 precaudals, lower close to lower edge of tail and upper behind or nearly at lateral line little posterior. Small infra-caudal luminous scale.

D. III, 9, I or III, 10, I, first branched ray $1 \frac{1}{3}$ to $1 \frac{2}{5}$ in total head length; adipose fin $2 \frac{7}{8}$ to 4; A. III, 16, I to IV, 18, I, first branched ray $1 \frac{1}{2}$ to $1 \frac{3}{5}$; caudal $1 \frac{1}{8}$ to $1 \frac{1}{3}$, well forked; least depth of caudal peduncle $3 \frac{1}{8}$ to 4; pectoral $1 \frac{1}{4}$ to $1 \frac{2}{5}$; ventral 2 to $2 \frac{1}{5}$.

Brown, nearly uniform where scales have fallen. Scales, sides of head and iris bright silvery white. Fins all pale brownish.

Atlantic, Indian and Pacific Oceans.

28942 U. S. N. M. N. 39° W. 69° . Albatross Collection .

Length 46 to 65 mm. 3 examples.

33842 U. S. N. M. N. 41° W. 65° . Albatross Collection 2073.

Length 55 mm.

37503 U. S. N. M. Cuba. Prof. F. Poey. Length 70 to 73 mm.

2 examples. Poorly preserved.

38171 U. S. N. M. N. 36° W. 73° . Albatross Collection .

Length 59 mm.

38193 U. S. N. M. N. $36^{\circ}35'$ W. $74^{\circ}03'30''$. Albatross Collection

2727. Length 58 to 74 mm. 5 examples.

43786 U. S. N. M. N. 39° W. 70° . Albatross Collection 2549.

Length 41 to 64 mm. 10 examples.

43792 U. S. N. M. N. 40° W. 64° . Albatross Collection .

Length 54 to 70 mm. Types of Myctophum remiger. 9 examples.

43793 U. S. N. M. N. 37° W. 73° . Albatross Collection 2742.

Length 48 to 65 mm. 8 examples.

43794 U. S. N. M. N. 36° W. 74° . Albatross Collection .

Length 50 to 64 mm. Paratypes of Myctophum remiger. 7 examples.

43795 U. S. N. M. Albatross Collection 2719. Length 46 to 62 mm.

4 examples.

72467 U. S. N. M. N. $39^{\circ}33'$ W. $70^{\circ}50'$. Albatross Collection 2682.

Length 56 to 68 mm. 5 examples.

72468 U. S. N. M. N. $32^{\circ}40'$ W. $76^{\circ}40'$. Albatross Collection .

Length 64 mm.

Genus Lampanyctus Bonaparte

Lampanyctus BONAPARTE, Iconog. Fauna Italica, Pesc. vol. 3,

fasc. 27, 1840, description. Type Serpe crocodilus RISSO =

Myctophus bonapartii COCCO, monotypic.

?Macrostoma RISSO, Hist. Nat. Eur. Merid., vol. 3, 1826, p. 447.

Type Macrostoma angustidens RISSO, monotypic.

(Macrostomus WIED, 1817, not involved.)

Notoscopelus GÜNTHER, Cat. Fishes Brit. Mus., vol. 5, 1864, pp. 405,

411. Type Lampanyctus resplendens RICHARDSON, designated by

GOODE and BEAN, Oceanic Ichth., 1895, p. 82.

Ceratoscopelus GÜNTHER, Cat. Fishes Brit. Mus., vol. 5, 1864,

p. (405) 412. Type Scopelus maderensis LOWE, monotypic.

Nannobrachium GÜNTHER, Rep. Voy. Challenger, vol. 22, 1887, p. 199.

Type Nannobrachium nigrum GÜNTHER, monotypic.

Stenobrachius EIGENMANN and EIGENMANN, Proc. California Acad. Sci.,

ser. 2, vol. 3, 1890, p. 5. Type Myctophum (Stenobrachius)

leucopsarum EIGENMANN and EIGENMANN, orthotypic.

Catablemella EIGENMANN and EIGENMANN, Proc. California Acad. Sci.,

ser. 2, vol. 3, 1890, p. 24. Type Nannobrachium brachyhir

EIGENMANN and EIGENMANN, orthotypic.

Nyctimaster JORDAN, Proc. U. S. Nat. Mus., vol. 59, 1922, p. 645,

fig. 2. Type Lampanyctus jordani GILBERT, orthotypic.

Maxillary only slightly expanded posteriorly. Mouth cleft extends far behind hind eye edge. Antorbital luminous organs not prominently enlarged. Fourth pectoral photophore sometimes elevated. Subpectoral photophores 2, usually well inclined, often in vertical line, rarely form straight series with first pectoral photophore; lower subpectoral often posterior to upper. Suprapectoral photophore always dorsal to pectoral fin. Anal photophores always in 2 groups. Posterolateral photophores 2. All photophores without black dividing septa. Luminous scales supra-caudal and infracaudal, also sometimes elsewhere on body. Precaudal photophores separate or contiguous with posteroanals, when separate as 3 to 6 or usually 3 or 4.

The following are insufficiently developed or described to be placed among the accepted species:

Nyctimaster reinhardtii JORDAN, 1922. Founded on damaged specimens.

Lampanyctus reinhardtii REGAN, 1916. Based on young.

The following are all small and imperfectly preserved specimens which are unidentifiable other than as belonging to Lampanyctus.

D. 4765. West point Yunaska Island, S. 37° E., 43.5 miles
(N. $53^{\circ}12'$ W. $171^{\circ}37'$), Alaska. In 1217 fathoms. May 29, 1906.

Length 27 mm.

D. 4766. Koniuji Island, S. 22.5° W., 27 miles (N. $52^{\circ}38'$
W. $174^{\circ}49'$), Alaska. In 1766 fathoms. May 31, 1906.

Length 30 mm.

D. 4785. N. $53^{\circ}20'$ E. $170^{\circ}33'$, North Pacific. In 1850 fathoms.
June 12, 1906. Length 25 to 30 mm.

29 examples.

D. 5125. Nogas Island (W.), S. 11° E., 24 miles (N. $10^{\circ}48'$
E. $121^{\circ}48'30''$), Sulu Sea vicinity southern Panay. In 411 fathoms.
February 3, 1908. Length 30 mm.

D. 5319. China Sea, vicinity of Formosa (N. $21^{\circ}31'$ E. $117^{\circ}53'$).
November 5, 1908. Length 25 to 29 mm. 3 examples.

D. 5320. China Sea, vicinity of Formosa (N. $20^{\circ}58'$ E. $120^{\circ}03'$).
In 1804 fathoms. November 6, 1908. Length 24 to 33 mm. 3 examples.

D. 5437. Hermana Mayor Light, N. 69° E., 4.9 miles (N. $15^{\circ}45'54''$
E. $119^{\circ}42'45''$), west coast of Luzon. May 8, 1909. Length 26 to 42 mm.
7 examples.

D. 5489. San Ricardo Point (Panaon Island). N. 42° E., 6.6 miles
(N. $9^{\circ}50'30''$ E. $125^{\circ}10'$), between Leyte and Mindanao. July 31, 1909.
Length 27 to 31 mm. 2 examples.

D. 5497. Bantigui Island, N. 64° W., 10 miles (N. $9^{\circ}07'15''$
E. $124^{\circ}59'30''$), between Leyte and Mindanao. In 960 fathoms.
August 3, 1909. Length 25 to 29 mm. 3 examples.

89908 U. S. N. M. N. 32°50' W. 64°18'. Museum of Comparative Zoology, Cambridge, Mass. Length 55 to 80 mm. 18 examples. Very poorly preserved, as Lampadena luminosa, which they are not.

Lampanyctus angustidens (Risso)

Scopelus angustidens RISSO, Mem. Accad. Sci. Torino, vol. 25, 1820,

p. 267. Nice. --GÜNTHER, Cat. Fishes Brit. Mus., vol. 5, 1864,

p. 404 (reference).

Myctophum angustidens CARUS, Prodr. Zool. Medit., vol. 2, 1893, p. 566

(compiled).

A nominal species I have not been able to place.

Analysis of species

- a¹. Pectoral photophores level, in continuous series; second and third ventrals not elevated above level of following organs in same series; supraventral always below lateral line; no photophores above lateral line.
- b¹. Subpectoral photophores not above pectoral fin base; 2 posterolaterals in oblique or subvertical series; no photophores on cheek; precaudals distinctly separate from anals.
- c¹. Six precaudals; 6 pectorals; 5 subpectorals; anals 10 + 7, first anteroanal elevated; head $3 \frac{1}{4}$; eye $3 \frac{2}{3}$ in head; Dorsal 18; Anal 20. ----- nicholsi.
- c². Three or 4 precaudals; 5 pectorals.
- d¹. Anals 10 + 7; first anteroanal elevated; 5 ventrals; scales 44.
- e¹. Dorsal 15; Anal 18; 1 suprapectoral; minute antorbital photophore. ----- braueri.
- e². Dorsal 18 or 19; 2 suprapectorals; 2 preocular luminous organs. ----- piabilis.
- d². Anteroanals 5 to 7 (anals total 9 to 13); 5 (4) ventrals; Dorsal 12 to 14; Anal 13 to 15.
- f¹. Predorsal luminous scales 5 to 12, 4 to 6 between dorsal and adipose fin, 3 or 4 supracaudals, 7 to 10 infracaudals, 4 to 6 along anal base; no luminous scales between ventrals and anal; head 3; eye $3 \frac{1}{3}$. ----- maderensis.

f². Circle of 6 small luminous patches on top of head;
9 predorsal luminous patches and 5 between ven-
tral and anal. ----- polyphotis.

f³. Supracaudal and infracaudal luminous scales; lumi-
nous scales along anal base and middle of belly;
head 3 to 3 1/2; eye 3 1/2 in head. --- townsendi.

b². Upper subpectoral above pectoral base.

g¹. Three photophores on each cheek, 1 at upper end
of preopercle and 2 along upper maxillary edge;
3 posterolaterals, 2 side by side and third
below front one. ----- procerum.

g². No photophores on cheek; dorsal rays more
numerous than anal rays.

h¹. One posterolateral; scales 36 to 38; anal spots
7 + 4; Dorsal 26; Anal 18 or 19. caudispinosus.

h². Two posterolaterals in horizontal series; anals
9 + 7; Dorsal 16; Anal 14. --- margaritiferus.

h³. Two (3) posterolaterals in horizontal series;
anals 7 to 9 + 5 to 7; scales 39 to 42;
Dorsal 21 to 24; Anal 17 to 20, origin midway
between hind eye edge and caudal base.

i¹. Supraventral at lower third or 2/5 between
lateral line and ventral fin origin. --
----- elongatus.

- i^2 . Supraventral at upper 2/5 between lateral line and ventral fin origin. ----- hoffmani.
- h^4 . Two (3) posterolaterals in horizontal series; anals 7 to 9 + 4 to 6; Dorsal 21 or 22; Anal 18 or 19, fin origin distinctly nearer caudal base than hind eye edge. ----- resplendens.
- h^5 . Three posterolaterals in horizontal series; anals 9 + 4; scales 46; Dorsal 20 or 21; Anal 16. ----- castaneus.
- \underline{a}^2 . Fourth pectoral elevated well above rest of series; sub-pectorals not above pectoral fin base.
- i^3 . Luminous scales not confined to caudal peduncle and adipose fin base, also present along dorsal and anal fin bases, and at paired fins; no organs on lower part of cheek or shoulder; first supraanal always below second and far below level of supraventral; pectorals usually long; second (not third) ventral spot elevated.
- \underline{j}^1 . Supraventral far below lateral line; supra-pectoral in or above lateral line; uppermost supraanal, posterolateral and pre-caudal above or close below lateral line; luminous scales along anal base and on caudal peduncle; ventral spots 5; pre-caudals 3; scales on caudal peduncle enlarged.

- k¹. First or lower subpectoral below or
behind upper. ----- supralateralis.
- k². First or lower subpectoral before and
well below upper. ----- blacki.
- j². Supraventral at or close to lateral line;
luminous scales along bases of dorsal and
anal.
- 1¹. Eye little less than 3; luminous glands
on top of head; luminous scales below
throat, above paired fin bases, along
dorsal and anal bases and on caudal
peduncle; upper supraanal, postero-
lateral and precaudal above lateral
line, 3 small postorbitals; 3 pre-
caudals; 5 ventrals; tail scales not
greatly enlarged. ----- photothorax.
- 1². Eye 3 to 3 1/3; luminous scales only at
dorsal, anal and ventral bases and on
caudal peduncle; upper supraanal and
posterolateral in lateral line, upper
precaudal above same; anals 4 to 6 + 3
to 5; 3 precaudals; 5 ventrals; 3
postorbitals. ----- longipes.
- 1³. Eye 3 2/3; 6 ventral spots; 4 pre-
caudals; anals 4 to 6 + 5 or 6; no
postorbitals; luminous scales on
caudal peduncle and at dorsal, anal
and ventral bases. ----- gaussi.

i⁴. Eye 3 to 4; anals 4 to 6 + 5 to 7;
 precaudals 3 or 4; 5 ventrals; no
 luminous scale at ventral base. --
 -----güntheri.

i⁵. Eye 6 to 7; 5 ventrals; luminous scales
 on caudal peduncle, at dorsal, anal
 and ventral bases; lateral line scales
 greatly enlarged. ----subpectoralis.

i⁴. Luminous scales only on caudal peduncle, but
 series of smaller, roundish, luminous glands,
 along each side of back from nape to behind
 dorsal fin; 2 photophores on each cheek;
 lateral line scales not enlarged. photonotus.

i⁵. Luminous sometimes at or before adipose fin,
 but otherwise only on caudal peduncle; no
 dorsal glands.

m¹. No photophores on cheeks or shoulder.

n¹. Precaudals 5, well separated from
 last posteroanal; anals 8 + 5;
 suprapectoral, supraventral,
 upper supraanal, posterolateral
 and precaudal all well below
 lateral line; 5 pectorals; 5
 ventrals. -----hectoris.

n². Precaudals 2 to 4, often confluent
with last posteroanal.

o¹. Pectoral fin long, reaching to
or far beyond anal origin.

p¹. Anals 5 + 7 (4 precaudals);
supraventral midway between
lateral line and ventral fin
base; eye 6. ---- tenuiformis.

p². Anals 5 to 7 + 8 to 10 (4 pre-
caudals); first and second
supraanal in line passing
through third supraanal,
supraventral and fourth
pectoral. Dorsal 15 or 16;
Anal 17 to 18. ----- nobilis.

p³. Anals 6 to 8 + 7 to 9 (4 pre-
caudals); first and second
supraanal not in line with
third supraanal, supraventral
and fourth pectoral; Dorsal
12 to 14; Anal 18 to 20. ----
----- festivus.

o². Pectoral very small or vestigial,
not reaching beyond ventral base,
sometimes entirely absent.

q¹. Dorsal origin postmedian;
 5 ventral photophores. ---
 ----- nigrescens.

q². Dorsal origin median or fre-
 median.

r¹. Scales 30 to 33 in lateral
 line; anals 6 + 5 (4
 precaudals); eye 4 to
 4 1/3; Dorsal 12; Anal
 14. ----- mexicanus.

r². Scales 33 or more; Dorsal
 12 to 19 (12); Anal 14 to
 25 (over 15).

s¹. Ventral spots 5.

t¹. Supraanals angulate.

u¹. First supraanal level
 with second, above
 or before fourth
 ventral; fourth
 pectoral below pec-
 toral fin base;
 anals 6 + 5 (4 pre-
 caudals).--microchir.

u^2 . First supraanal lower
 than second, above
 interval between
 fourth and fifth
 ventral; fourth pec-
 toral above or level
 with pectoral fin
 base; anals 5 to 7 + to
 6 to 8.-micropterus.

t^2 . Supraanals in straight
 oblique line. -----
 ----- nannochir.

s^2 . Ventral spots 4.

v^1 . Supraanals in
 straight oblique
 line; head $3 \frac{3}{5}$
 to $3 \frac{4}{5}$; eye
 $3 \frac{1}{2}$. leucopsarus.

v^2 . Supraanals angulate.

w^1 . Second ventral
 spot behind
 first.

x^1 . Supraventral at
 lower third to
 midway between
 lateral line
 and ventral
 fin origin.

y¹. Scales 36 or

37. -----

macdonaldi.

y². Scales 30 to

32. -----

idostigma.

x². Supraventral

much nearer

lateral line

than ventral

fin; scales

35. -- niger.

x³. Supraventral at

or close to

lateral line.

z¹. First sup-
raanal
over in-
terval
between
second
and third
ventral;
last pre-
caudal
over pe-
nultimate
precaudal;
anals 6
to 8 +
6 to 8.
-----ater.

z². First

supraanal
above in-
terval be-
tween
third and
fourth
ventral;
last pre-
caudal
well
behind
penulti-
mate pre-
caudal;
anals 5
to 7 +
4 to 6.--
cuprarius.

z³. First

supraanal

over

inter-

space be-

tween

third and

fourth

ventrals;

last pre-

caudal

well be-

hind pe-

nultimate

precaudal;

anals 7

to 9 †

6 to 8.--

-lineatus.w². Second ventral

over first;

anals 4 or

5 † 8 to 10.

----- turneri.

m². No photophores on cheek, 1 on each
shoulder.

aa¹. Anal

origin

below

middle

or

under

last

half

of

dorsal

fin;

anals

4 to 6

†8 to

10.

bb¹. Lower

sub-

pec-

tor-

al

ne-

ar-

er

up-

per

sub-

pec-

tor-

al.

mae-

rop-

ter-

us.

bb². Lower

sub-

pec-

tor-

al

ne-

ar-

er

sec-

ond

pec-

tore

al

spot

than

up-

per

sub-

pec-

tor-

al.

ben-

soni.

aa². Anal origin below
base of penult-
mate dorsal ray;
anals 6 + 8 or
9. ---- omostigma.

m³. One photophore on each cheek and 1 on
each shoulder.

cc¹. Eye $6 \frac{2}{5}$; anals 7 + 6. ----- punctatissimus.

cc². Eye $4 \frac{1}{2}$ to $4 \frac{2}{3}$; anals 8 + 8 or 9. ----- jordani.

cc³. Eye 3; anals 7 + 4. ----- stilbuis.

m⁴. No photophores on shoulder, 1 (or
many minute ones) on each cheek.

dd¹. Supraventral midway between lateral line and ventral fin base;
anals 4 to 6 + 5 to 7. ----- pusillus.

dd². Supraventral midway between lateral line and ventral fin base;
anals 8 + 7 or 8. ----- ritteri.

dd³. Supraventral twice as far from ventral fin base as from lateral
line; anals 8 + 7 or 8. ----- regalis.

dd⁴. Supraventral at lateral line; anals 4 to 6 + 5 to 7. ---- alatus.

dd⁵. First and second anteroanal lower than line through rest of
series, second even lower than first; luminous scale at adi-
pose fin; anals 9 or 10 + 8 or 9. ----- intricarius.

m⁵. No photophores at shoulder; 2 photo-
phores on each cheek; no luminous
adipose scale; anals 5 to 7 + 6 to
8. ----- gemmifer.

m⁶. No photophores at shoulder, 3 on each
cheek; luminous scale at adipose
fin; scales 38. ----- crocodilus.

m⁷. No photophores at shoulder, 2 on each
cheek; no luminous scale at adipose
fin. ----- tanningi.

Lampanyctus nicholsi Gilbert

Lampanyctus nicholsi GILBERT, Bull. Amer. Mus. Nat. Hist., vol. 30,

1911, p. 17, fig. North of Falkland Islands. --PARR,

Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928,

p. 78 (diagnosis in key). --NORMAN, Discovery Rep., vol. 2,

1930, p. 326 (S. $50^{\circ}45'$ W. $56^{\circ}33'$; S. $49^{\circ}22'$ W. $54^{\circ}48'$;

S. $44^{\circ}42'30''$ E. $17^{\circ}47'$; Drake Strait S. $58^{\circ}27'30''$ W. $67^{\circ}55'$;

S. $46^{\circ}55'$ W. $60^{\circ}40'$; 0 to 124 meters).

Depth $5 \frac{1}{6}$; head $3 \frac{1}{4}$, width $2 \frac{1}{3}$. Snout $6 \frac{3}{4}$ in head; eye $3 \frac{7}{8}$, greatly exceeds snout, $1 \frac{1}{2}$ in interorbitall maxillary extends $1 \frac{1}{5}$ eye diameters behind eye, slender, length $1 \frac{1}{3}$ in head; interorbital low. Gill rakers 10 + 22, long.

Scales 42 in lateral line, all fallen.

Small antorbital photophore between orbit and lower part of nostril; 2 operculars, upper larger, level with interval between subpectoral; 3 branchiostegals; 6 pectorals, level, first interspace greatest; 1 suprapectoral, little nearer lateral line than pectoral base, slightly advanced from over upper subpectoral but behind first pectoral; 2 subpectorals, upper little advanced though close to lower and both before pectoral fin base; 5 ventrals, equidistant, level; 1 supraventral, little nearer ventral base than lateral line; anals 10 + 7, posteroanals behind anal fin base, first anteroanal elevated till level with second or median supraanal; 3 supraanals, first or lowest only slightly higher than last ventral, median vertically below uppermost or below and slightly posterior, uppermost little below lateral line or over vent; 2 posterolaterals, in oblique line passing behind last anteroanal, upper little below lateral line; 6 precaudals, equidistant, in slight curve above bases of lower rudimentary caudal rays and last well below level of lateral line. Series of very large chromatophores, 1 to each scale, on second series of scales below dorsal base and back to upper caudal lobe.

D. III, 14, I, first branched ray $1 \frac{2}{5}$ in head; adipose fin 4; A. III, 16, first branched ray $1 \frac{4}{5}$; caudal $1 \frac{1}{10}$, forked, least depth of caudal peduncle $3 \frac{1}{3}$; pectoral $2 \frac{1}{2}$; ventral $1 \frac{5}{6}$.

Dark slate. Opercles jet black. Length 65 mm. (Gilbert).

South Atlantic, Falkland Island, Drake Strait. Norman's description gives: Depth $5 \frac{1}{4}$ to 6; head $3 \frac{1}{3}$ to $3 \frac{2}{3}$; eye $3 \frac{3}{4}$ to 4 in head, about equals interorbital; scales 43 to 45; last pectoral photophore little elevated; anals 9 to 11 + 7; 2 or 3 posterolaterals; 6 to 9 pre-caudals; length to 77 mm.

Lampanyctus braueri (Lönnberg)

Myctophum (Lampanyctus) braueri LÖNNBERG, Zool. Anzeiger, vol. 28,

Nr. 23, April 25, 1905, p. 764. S. $48^{\circ}54'$ W. $51^{\circ}40'$; Wiss.

Ergeb. Schwed. Südpolar-Exp., vol. 5, Zool. 1, 1905, p. 64,

fig. 1 (type). --BRAUER, Deutsch. Tiefsee Exp. Valdivia,

vol. 15, Tiefsee-Fische, 1906, p. 230, fig. 150 (compiled).

Lampanyctus braueri REGAN, Trans. Roy. Soc. Edinburgh, vol. 49,

pt. 2, May 23, 1913, p. 234 (S. $69^{\circ}33'$ W. $15^{\circ}19'$, 2620 fathoms); Fishes

Nat. Hist. Rep.

Brit. Antarctic "Terra Nova" Exp.,/Zool., vol. 1, No. 1, 1914,

p. 38 (off Coats Land; S. $49^{\circ}56'$ W. $49^{\circ}56'$). --PARR, Bull. Bingham

Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 78 (diagnosis

in key). --NORMAN, Discovery Rep., vol. 2, 1930, p. 327 (S. $49^{\circ}22'$

W. $54^{\circ}48'$, 90 meters; S. $48^{\circ}09'$ W. $52^{\circ}50'$, 45 meters; S. $53^{\circ}25'$

W. $35^{\circ}15'$, 1025 to 1275 meters; S. $46^{\circ}56'$ W. $46^{\circ}03'$, 1050 to 1350

meters; S. $35^{\circ}14'$ E. $6^{\circ}49'$, 850 to 1100 meters).

Depth $5 \frac{1}{4}$; head $3 \frac{1}{8}$. Snout $4 \frac{2}{3}$ in head; eye $4 \frac{1}{2}$, greater than snout; maxillary extends nearly eye diameter behind eye, slender, not reaching hind preopercle edge, length $1 \frac{1}{2}$ in head; interorbital low.

One antorbital photophore, little below middle of front eye edge; 2 operculars, upper little larger; 3 equidistant branchiostegals; 5 pectorals, first interspace twice that of other interspaces; 1 suprapectoral, little before and above pectoral fin origin or little closer to lateral line; 2 subpectorals, upper close below bases of lowest pectoral rays and lower close below; 6 ventrals at same level; 1 supraventral, overventral fin base about midway to lateral line; 10 + 7 anals, first anteroanal close above and little before second, all posteroanals, behind anal fin base; 2 supraanals, first level with first or elevated anteroanal and over last ventral, second or uppermost close below lateral line opposite anal fin origin; 2 posterolaterals, lower little behind and above last anteroanal and upper close below lateral line, all 3 in inclined line; 4 precaudals, lowest 3 together at lower front tail edge and fourth elevated close below end of lateral line at caudal base.

D. III, 12, I, first branched ray $2 \frac{2}{5}$ in head; adipose fin 3; A. III, 15, I, first branched ray $3 \frac{1}{5}$; caudal $1 \frac{1}{3}$, deeply forked; least depth of caudal peduncle $3 \frac{2}{3}$; pectoral 2; ventral 2.

Length mm.

"
(Lonnberg)

Antarctic Ocean.

Lampanyctus piabilis Whitley

Lampanyctus piabilis WHITLEY, Rec. Australian Mus., vol. 18,

No. 3, March 25, 1931, p. 103, fig. 1. Macquarie Island.

Lampanyctus braueri (not LÖNNBERG) WAITE, Australas. Antarctic.

Exp., Ser. C. Zool. Botany, vol. 3, pt. 1, Fishes, 1916,

p. 61, figs. 14-14a (Macquie Island specimens). --PARR, Bull.

Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 78

(part). --NORMAN, Discovery Rep., vol. 2, 1930, p. 327 (part).

Depth $5 \frac{7}{8}$; head $3 \frac{1}{2}$. Snout $6 \frac{1}{4}$ in head from snout tip; eye $3 \frac{1}{3}$, greatly exceeds snout; maxillary extends eye diameter behind eye, slender, length $1 \frac{1}{4}$ in head from snout tip; interorbital apparently level with top of eye.

Scale 42 in lateral line.

Two well developed luminous glands on front edge of eye with orbital border, upper above nostrils and lower at anteroinferior edge extending backwards to below pupil; 1 opercular, above level of maxillary, second perhaps lower; 5 pectorals, first interval greatly longest, fifth little before ventral origin; 1 suprapectoral at upper third between lateral line and pectoral fin origin; 2 subpectorals, upper close above pectoral fin origin, lower close below lower pectoral ray bases and both spots in slightly inclined series from vertical to include suprapectoral; 5 ventrals, in slightly arched series, equidistant; 1 supraventral, midway between ventral fin base and lateral line; anals 7 or 8 + 10, last anteroanal slightly elevated from level of others and posteroanals all level and behind anal fin base; 3 supraanal in slightly inclined series posteriorly with second close above first and third close below lateral line, series sloping little posteriorly below; 2 posterolaterals, slightly inclined series with last anteroanal, equidistant and second or upper little below lateral line; 4 precaudals, lower 3 continuous with last posteroanals and fourth posterior close below end of lateral line.

D. III, 15, first branched ray $2 \frac{1}{10}$ in total head; adipose fin $4 \frac{2}{5}$; A. III, 15, first branched ray $1 \frac{9}{10}$; caudal $1 \frac{3}{5}$, emarginate; least depth of caudal peduncle $3 \frac{1}{8}$; pectoral $3 \frac{4}{5}$?; ventral $1 \frac{4}{5}$.

Length 103 mm. without caudal.

(Whitley)

Antarctic Ocean.

Lampanyctus maderensis (Lowe)

Scopelus maderensis LOWE, Proc. Zool. Soc. London, vol. 7, 1839,

p. 87. Madeira; Trans. Zool. Soc. London, vol. 3, pt. 1, 1839,

p. 14 (Madeira); Proc. Zool. Soc. London, 1850, p. 250. --

GÜNTHER, Cat. Fishes Brit. Mus., vol. 5, 1864, p. 412

(Mediterranean, Madeira, type). --CARUS, Prod. Fauna Medit.,

vol. 2, 1893, p. 565 (compiled). --COLLETT, Res. Camp. Sci.

Monaco, vol. 10, 1896, p. 114 (off Newfoundland Bank, Cape

Finisterre). --RAFFAELE, Mitth. Zool. Stat. Neapel, vol. 9,

1889, p. 184, pl. 7, fig. 9. --LÜTKEN, ^{Vidensk.} ~~xxxx~~ Medd. Naturh.

Foren. Kjöbenhavn, 1891, p. 208 (Vestmanöerne, Iceland);

Kon. Dansk. Vidensk. Selsk. Skrift. Kjöbenhavn, ser. 6, vol. 7,

1892, p. 262, fig. 21 (Iceland).

Ceratoscopelus maderensis GOODE and BEAN, Oceanic Ichth., 1895,

p. 82, pl. 24, fig. 91 (N. 36° to 39° W. 68° to 74°, 1686

fathoms; Messina). --ROULE, Res. Camp. Sci. Monaco, vol. 52,

1919, p. 30 (N. 36°17' W. 28°53', surface). --VAILLANT, Res.

Camp. Sci. Monaco, vol. 52, 1919, p. 130 (N. 38°27' W. 26°30'45",

surface).

Ceratoscopelus madeirensis JORDAN and EVERMANN, Bull. U. S. Nat.

Mus., No. 47, pt. 1, 1896, p. 557 (compiled; error).

Myctophum (Lampanyctus) maderense BRAUER, Zool. Anzeiger, vol. 28,

Nr. 10, Dec. 20, 1904, p. 394 (diagnosis in key). --BRAUER,

Deutsch. Tiefsee Exp. Valdivia, vol. 15, Tiefsee-Fische, 1906,

p. 227, text fig. 148 (N. $24^{\circ}43'4''$ W. $17^{\circ}1'3''$, south of Canaries;

N. 42° W. 14° , between Portugal and Azores). --ZUGMAYER, Rés. Camp.

Sci. Monaco, vol. 35, 1911, p. 33 (N. $37^{\circ}28'$ W. $25^{\circ}53'30''$, 1000

fathoms; N. $38^{\circ}2'$ E. $1^{\circ}50'30''$, 1700 fathoms; N. $37^{\circ}46'$ W. $0^{\circ}5'$,

520 fathoms). --MURRAY and HJORT, The Depths of the Ocean, 1912,

p. 613 (N. $28^{\circ}52'$ W. $14^{\circ}16'$, 2170 meters, off Canaries).

Fishes

Lampanyctus maderensis REGAN, Brit. Antarctic "Terra Nova" Exp.

Nat. Hist. Rep. Zool., vol. 1, No. 4, 1916, p. 140, pl. 6,

fig. 6 (S. 18° W. $31^{\circ}45'$, surface). --TAANING, Rep. Danish

Oceanogr. Exp. Medit., No. 5, vol. 2, A. 7, 1918, p. 93, figs.

37-38 (Mediterranean, Atlantic); Vidensk. Medd. Dansk Naturh.

Foren. København, vol. 86, 1928, p. 64 (North Atlantic, Mediterranean;

diagnosis in key). --PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art 3, Dec. 1928, p. 78 (compiled).

Scopelus bonapartii VALENCIENNES, Hist. Nat. Poiss, vol. 22, 1848,

p. 449. Nice. --JOHNSON, Ann. Mag. Nat. Hist., vol. 10, 1862,

p. 281 (Madeira). --CANESTRINI, Fauna Italia Pesci, 1874, p. 125

(Sicily). --MOREAU, Poiss. France, vol. 3, 1881, p. 507, fig. 203

(Nice).

Scopelus doderleini FACCIOLA, Nat. Sicil., Anim., vol. 1, 1882,

p. 193, figs. 1-4. Messina.

Scopelus acanthurus FACCIOLA, Nat. Sicil. Anim., vol. 1, 1882,

p. 166. Messina.

Depth $4 \frac{3}{4}$ to 5; head 3 to $3 \frac{1}{8}$, width $2 \frac{2}{5}$. Snout $5 \frac{1}{8}$ to $5 \frac{1}{4}$ in head from snout tip; eye $3 \frac{1}{8}$, greater than snout or interorbital; maxillary extends $\frac{1}{2}$ to $\frac{3}{5}$ eye diameter beyond eye but not quite to well inclined hind preopercle edge, slender, length $1 \frac{1}{3}$ to $1 \frac{2}{5}$ in head from snout tip; interorbital $4 \frac{2}{5}$, little concave. Gill rakers $9 + 17$, lanceolate, $1 \frac{2}{5}$ in interorbital; gill filaments $\frac{1}{2}$ of eye.

Scales 34 to 37 in lateral line, slightly enlarged; 3 above, 3 below, 13 predorsal to occiput. Caudal base scaly. Scales with 2 basal radiating striae; circuli fine, complete.

Small antorbital photophore slightly below middle of front eye edge; 2 opercular photophores, upper little larger and in line with lower eye edge passing between subpectorals; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace greatest, fifth photophore little elevated or before ventral fin origin; 1 suprapectoral close below lateral line and before pectoral fin origin; 2 subpectorals, first or lower rather close below upper or midway between upper and second pectoral, upper close before bases of median pectoral rays; 5 ventrals, second and third slightly higher than others; 1 supraventral midway between lateral line and ventral fin origin; 5 or 6 + 5 to 7 anals, second anteroanal slightly elevated in series, posteroanals behind anal fin base; 3 supraanals, first lowest, over and close behind last ventral, second still higher or midway below lateral line and third close below lateral line opposite anal fin origin; 2 posterolaterals, first or lower over and little posterior from last anteroanal and upper close below lateral line below adipose fin; 4 precaudals, first to third close and little inclined progressively, fourth close below lateral line end. Supracaudal luminous organs 3, infracaudals 8 to 10, each side of anal base about 6 and 4 or 5 in median row behind ventral fin bases.

D. III or IV, 9, I or 10, I, first branched ray $1 \frac{1}{2}$ to 2 in total head length; adipose fin 4; A. III, 11, I, first branched ray 2 to $2 \frac{1}{2}$; caudal $1 \frac{1}{6}$ to $1 \frac{1}{2}$, well forked; least depth of caudal peduncle $3 \frac{1}{5}$ to $3 \frac{2}{5}$; pectoral $1 \frac{1}{10}$ to $1 \frac{2}{3}$; ventral $1 \frac{4}{5}$ to $2 \frac{1}{4}$.

Brown, scale pockets dark. Scales all with iridescent silvery reflections. Opercles blackish, also inside gill opening. Iris silvery gray to white. Fins whitish.

Atlantic and Arctic Oceans.

21681 U. S. N. M.

No. 219. Length 74 mm.

21690 U. S. N. M. Georges Bank. Schooner John Smith. No. 199.

Length 68 to 74 mm. 2 examples.

28934 U. S. N. M. N. 39° W. 69°. Fish Hawk Collection.

Length 74 mm.

28978 U. S. N. M. N. 39°58' W. 70°06'. Bureau of Fisheries.

Length 64 to 80 mm. 3 examples. In poor preservation.

32811 U. S. N. M. N. 36° W. 74°. Albatross Collection.

Length 79 mm.

33564 U. S. N. M. N. 39° W. 68°. Albatross Collection (2101).

Length 35 to 61 mm. 2 examples.

40074 U. S. N. M. Messina, Italy. Royal Zoological Museum Florence.

Length 63 to 65 mm. 2 examples.

43810 U. S. N. M. Bureau of Fisheries. Length 67 mm.

49381 U. S. N. M. Messina. M. Bellotti. Length 68 to 77 mm.

4 examples.

83861 U. S. N. M. Albatross Collection (2750). Length 19 to 23 mm.

2 examples.

Lampanyctus polyphotis Beebe

Lampanyctus polyphotis BEEBE, Zoologica N. Y. Zool. Soc., vol. 13,

No. 4, March 1932, p. 67, fig. 14. Five miles south of Nonsuch,

Bermuda, 900 fathoms.

Depth $4 \frac{9}{10}$; head $3 \frac{1}{5}$. Snout $5 \frac{2}{3}$ in head; eye $3 \frac{9}{10}$, greater than snout; maxillary extends $\frac{3}{4}$ eye diameter behind eye, length $1 \frac{1}{2}$ in head; interorbital low.

Scales 36 in lateral line.

Pectoral photophores 5, fifth elevated before ventral fin origin; 1 suprapectoral, little below lateral line, in line with upper subpectoral and third pectoral; 2 subpectorals, first or lower over second pectoral, upper close before bases of uppermost pectoral rays; 5 ventrals, first lowered, fifth little elevated; 1 supraventral, little below middle between lateral line and ventral fin origin; anals 6 + 6, posteroanals behind anal fin base; 3 supraanals broadly angulate, first behind last last ventral, second progressively higher and posterior and third close below lateral line; 2 posterolaterals, in oblique line with last anteroanal, second little nearer first and third close below lateral line; 4 precaudals, first and second side by side, third little higher and posterior and fourth which close below lateral line. Six luminous patches in circle on top of head; 9 predorsal, along dorsal base 7 or 8; 2 behind dorsal; 7 supracaudal; 5 along gill opening; 1 above pectoral fin base; 1 above ventral fin base; 5 between ventrals and vent; 6 along anal base; 12 infracaudal.

Lampanyctus townsendi JORDAN and EVERMANN, Bull. U. S. Nat. Mus.,

No. 47, pt. 1, 1896, p. 558 (compiled). --GILBERT, Mem. Mus.

Comp. Zool., vol. 26, No. 6, 1908, p. 230, pl. 4 (Ua Huka Island,

Marquesas Islands, to 300 fathoms); Mem. Carnegie Mus., vol. 6,

No. 2, 1913, p. 98 (off southern Japan, in 507 to 850 fathoms). --

McCULLOCH, Records Australian Mus., vol. 14, 1923, p. 115, pl. 14,

fig. 2. --PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3,

Dec. 1928, p. 79 (compiled). --FOWLER, Mem. Bishop Mus., vol. 10,

1928, p. 68 (compiled). --NORMAN, Discovery Rep., vol. 2, 1930,

p. 327 (S. $32^{\circ}46'$ W. 10° , 0-30 meters; S. $33^{\circ}07'40''$ E. $4^{\circ}30'20''$,

0-2000 meters; S. $41^{\circ}33'30''$ W. $17^{\circ}58'$, 110 meters; S. $35^{\circ}01'$

E. $10^{\circ}18'$, 0-250 meters; S. $13^{\circ}58'30''$ E. $11^{\circ}43'30''$, 0-200 meters;

S. $2^{\circ}43'30''$ W. $00^{\circ}56'30''$, 125-175 meters; S. $2^{\circ}49'30''$ W. $9^{\circ}25'30''$,

800-1000 meters; S. $00^{\circ}56'$ W. $14^{\circ}08'30''$, 0-250 meters; N. $4^{\circ}33'15''$

W. $16^{\circ}52'45''$, 100-150 meters; N. $8^{\circ}12'$ W. $18^{\circ}49'$, 0-120 meters;

N. $12^{\circ}08'$ W. $20^{\circ}53'30''$, 0-163 meters).

D. 13, I; A. 14, origin slightly before hind end of dorsal base;
pectoral rays 14, fin $1 \frac{1}{8}$ in head; ventral 2, rays 8. Length 49 mm.
without caudal. (Beebe.)

Bermuda.

Lampanyctus townsendi (Eigenmann and Eigenmann)

Myctophum townsendi EIGENMANN and EIGENMANN, West American Scientist,

1889, p. 125. Cortez Banks, near San Diego, California. --GOODE

and BEAN, Oceanic Ichth., 1895, p. 512 (reference).

Myctophum (Lampanyctus) townsendi BRAUER, Deutsch. Tiefsee Exp.

Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 167 (diagnosis in key).

Scopelus (Myctophus) warmingi LÜTKEN, Kon. Dansk. Vidensk. Selsk.

Skrift. Kjöbenhavn, ser. 6, vol. 7, 1892, p. 259, fig. 19.

N. $32^{\circ}6'$ W. $39^{\circ}28'$; south of Azores.

Lampanyctus warmingii GOODE and BEAN, Oceanic Ichth., 1892, pp. 80,

512 (compiled).

Lampanyctus warmingi TAANING, Vidensk. Medd. Dansk Naturh. Foren.

Köbenhavn, vol. 86, 1928, p. 65 (North Atlantic; diagnosis in

key). --PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3,

Dec. 1928, p. (79) 91, text fig. 11 (N. 21° to 32° W. 64° to 77° ,

6000 to 1000 feet); Proc. U. S. Nat. Mus., vol. 76, 1929, p. 13

(type of Lampanyctus townsendi).

Myctophum (Lampanyctus) warmingi BRAUER, Zool. Anzeiger, vol. 28,

Nr. 10, Dec. 20, 1904, p. 394 (diagnosis in key); Deutsch.

Tiefsee Exp. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 229,

text fig. 149 (N. $24^{\circ}43'4''$ W. $17^{\circ}1'3''$, south of Canaries;

N. $1^{\circ}51'$ E. $0^{\circ}31'2''$, Gulf of Guinea; S. $26^{\circ}3'6''$ E. $93^{\circ}43'7''$, off

Cocos; S. $10^{\circ}8'2''$ E. $97^{\circ}14'9''$; N. $7^{\circ}1'2''$ E. $85^{\circ}56'5''$, Bay of

Bengal; N. $4^{\circ}56'$ E. $78^{\circ}15'3''$, south of Ceylon; Mauritius). --

MURRAY and HJORT, The Depths of the Ocean, 1912, p. 613

(N. $31^{\circ}20'$ W. $35^{\circ}7'$, 3886 meters, Gran Canaria to Fayol). --

PAPPENHEIM, Deutsch. Südpolar Exp., vol. 15, Zool.^{pt.}/7, 1914, p. 195

(S. $11^{\circ}19'$ W. $18^{\circ}34'$, 1200 meters south west of Ascension Island;

S. $30^{\circ}21'$ W. $14^{\circ}2'$, 10 meters; S. $24^{\circ}55'$ W. $1^{\circ}18'$, 1500 meters;

N. $28^{\circ}42'$ W. $34^{\circ}33'$, 3000 meters; N. $29^{\circ}43'$ W. $34^{\circ}22'$, 10 meters). --

BARNARD, Ann. South African Mus., vol. 21, pt. 1, 1925, p. 237

(off Cape Point, 600 fathoms).

Lampanyctus alatus (Not GOODE and BEAN) BREEDER, Bull. Bingham

Oceanogr. Collection, vol. 1, art. 1, 1927, p. 17 (part).

Depth $4 \frac{2}{5}$ to $4 \frac{4}{5}$; head $2 \frac{4}{5}$ to $3 \frac{1}{8}$, width $2 \frac{2}{5}$ to $2 \frac{3}{5}$.

Snout 6 to $7 \frac{3}{4}$ in head; eye $3 \frac{1}{4}$ to $3 \frac{3}{4}$, greater than snout or inter-orbital; maxillary extends $\frac{2}{3}$ an eye diameter behind eye though not to slightly inclined hind preopercle edge, slender, length $1 \frac{1}{2}$ to $1 \frac{3}{5}$ in head; interorbital $3 \frac{3}{4}$ to $3 \frac{7}{8}$, level. Gill rakers $4 + 11$, lanceolate, rather strong, also 4 more as rudiments above and 5 below; $1 \frac{1}{2}$ in eye; gill filaments $1 \frac{1}{3}$ in gill rakers.

Scales 38 in lateral line to caudal base, enlarged; 3 above, 3 below. Caudal base scaly. Scales very caducous, most all fallen.

Small antorbital photophore little below middle of front eye edge; 2 operculars, upper larger, in line from lower eye edge passing between subpectorals to lowest pectoral fin ray, lower little below hind maxillary end; 3 equidistant branchiostegals; 5 pectorals, first interspace longest, only fifth spot slightly elevated or before ventral fin origin; 1 suprapectoral close below lateral line well before upper though above or over lower subpectoral; 2 subpectorals, first or lower slightly in advance of upper though much nearer to and slightly advanced over second pectoral, upper close before middle of pectoral fin base; 4 or 5 ventrals, all at same level; 1 supraventral little below middle to above upper third in space between lateral line and ventral fin origin; 5 or 6 + 4 to 6 anals, anteroanals slightly arched, posteroanals all behind anal fin base; 3 supraanals, first or lowest above and little behind fourth ventral, second still posterior and higher though little closer to first than to third which close below lateral line above and slightly behind second; 2 posterolaterals, first nearer and behind last anteroanal, second close below lateral line behind first; 4 precaudals, first 3 arched at lower rudimentary caudal rays and fourth posterior at end of lateral line. Supracaudal luminous scales 4, infracaudal 10 to 12; 8 along anal base, 6 median behind ventral fin bases and 1 median before ventral fin bases; 5 or 6 luminous bodies along each side of anal fin, 5 or 6 medially before vent with last pair double; often 3 or 4 pairs on lower face of thorax and often luminous area at lower face of ventral bases; 10 predorsal; 8 between dorsal and adipose fin.

D. 5227. Pt. Orizon, S. 44° E., 18.30 miles (N. $12^{\circ}53'45''$
E. $121^{\circ}52'30''$), east of Mindoro. In 322 fathoms. May 5, 1908.
Length 20 to 21 mm. 5 examples.

D. 5319. N. $21^{\circ}31'$ E. $117^{\circ}53'$, China Sea vicinity of Hong Kong.
November 5, 1908. Length 26 to 27 mm. 3 examples.

D. 5320. N. $20^{\circ}58'$ E. $120^{\circ}03'$, China Sea vicinity of Hong Kong.
In 1804 fathoms. November 6, 1908. Length 23 to 33 mm. 3 examples.

41924 U. S. N. M. Cortez Bank, California. C. H. Eigenmann.
Length 50 to 80 mm. Type (largest) and 3 paratypes.

74718 U. S. N. M. Albatross Collection (4980). Length 57 mm.

75805 U. S. N. M. N. $31^{\circ}55'$ W. 136° . Albatross Collection (3797).
Length 25 mm.

D. III, 10, I, first branched ray $1 \frac{4}{5}$? in head; adipose fin 4 to $10 \frac{1}{4}$; A. III, 11, I, first branched ray $2 \frac{2}{5}$? to $2 \frac{1}{2}$; caudal $1 \frac{1}{8}$ to $1 \frac{1}{3}$, well forked; least depth of caudal peduncle $3 \frac{1}{3}$ to $3 \frac{1}{2}$; pectoral 1 to $1 \frac{1}{8}$; ventral $1 \frac{3}{5}$ to $1 \frac{4}{5}$.

Brown, head and iris largely blackish. Inside gill opening and pharynx blackish. Fins pale to whitish.

Atlantic, Pacific, Indian and Antarctic Oceans. Distinguished by the extensive glandular areas along the under surface of the post-ventral along each side of the anal base and both above and below on caudal about rudimentary caudal rays. It also approaches Lampanyctus minima Taaning in the arrangement of the supraventral photophores which are well below the lateral line. The precaudals differ, however, as there are 3 approximated below and 1 more close below the terminus of the lateral line.

D. 5497. Bantigui Island, N. 64° W. 10 miles (N. $9^{\circ}7'15''$ E. $124^{\circ}59'30''$), between Leyte and Mindanao. In 960 fathoms. August 3, 1909. Length 26 to 53 mm. 6 examples.

D. 5604. Bilatu (town), N. 26° W., 8.7 miles (N. $0^{\circ}22'30''$ E. $120^{\circ}42'30''$), Gulf of Tomini, Celebes. November 15, 1909. Length 36 mm.

D. 5233. Limasaua Island (S.), S. 70° E., 19.50 miles (N. $10^{\circ}00'22''$ E. $124^{\circ}45'06''$), between Bohol and Leyte. May 7, 1908. Length 46 mm.

Lampanyctus procerum (Brauer)

Myctophum (Lampanyctus) procerum BRAUER, Zool. Anzeiger, vol. 28,

Nr. 10, Dec. 20, 1904, p. 395 (diagnosis in key), p. 402,

fig. 9. Near Agulhas Bank; Deutsch. Tiefsee Exp. Valdivia,

vol. 15, Tiefsee-Fische, 1906, p. 231, fig. 151 (S. $35^{\circ}32'8''$

E. $18^{\circ}20'1''$, 2000 meters). --PAPPENHEIM, Deutsch. Südpolar Exp.,

vol. 15, Zool., pt. 7, 1914, p. 195 (S. $35^{\circ}10'$ E. $2^{\circ}33'$, 3000

meters). --BARNARD, Ann. South African Mus., vol. 21, pt. 1,

June 1925, p. 238 (compiled).

Lampanyctus procerum PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, Dec. 1928, p. 79 (diagnosis in key).

Depth $4 \frac{4}{5}$; head $3 \frac{1}{4}$. Snout $5 \frac{2}{5}$ in head; eye $4 \frac{2}{5}$, greater than snout; maxillary extends $1 \frac{1}{4}$ eye diameters behind eye, length $1 \frac{1}{2}$ in head; interorbital very low.

Scales 40 in lateral line, cycloid.

Small antorbital photophore at lower front eye edge; 3 on cheek, upper close before upper edge of preopercle level with upper pupil edge, anterior lower just behind eye close above upper maxillary edge, posterior lower over hind end of maxillary; 2 operculars, upper little larger, slightly lower and lower posterior cheek spot or about level with lower subpectoral; 3 branchiostegals; 6 ventrals, level, second interspace greatly longest; 1 suprapectoral, in nearly vertical series with subpectorals, midway between lateral line and upper subpectoral, which slightly above pectoral fin origin and lower subpectoral nearer upper than first or second pectoral spots; 5 ventrals, level; 1 supraventral, little nearer lateral line than ventral fin base; 8 + 9 anals, first anteroanal little lower than following, last 6 posteroanals behind anal fin base; 3 supraanals, in obtuse angle, first over fifth ventral though above level of lower subpectoral, median level with supraventral and lowest posterolateral, below uppermost which close below lateral line; 3 posterolaterals, 2 upper side by side close below lateral line and first over second which also in vertical line with last anteroanal; 4 precaudals, first 3 close and low, fourth close below end of lateral line.

D. III, 14, first branched ray $1 \frac{3}{4}$ in head, adipose fin $3 \frac{2}{5}$;

A. III, 18, first branched ray $2 \frac{1}{10}$, inserted below last $\frac{2}{5}$ of dorsal base; caudal $1 \frac{1}{3}$, deeply emarginate; least depth of caudal peduncle $3 \frac{1}{10}$; pectoral?; ventral 2.

Length 22.3 mm.

(Brauer.)

South Atlantic.

Lampanyctus caudispinosus (Johnson)

Scopelus caudispinosus JOHNSON, Proc. Zool. Soc. London, vol. 33,
1863, p. 42. Madeira. --GÜNTHER, Cat. Fishes Brit. Mus.,
vol. 5, 1864, p. 416 (type).

Notoscopelus caudispinosus GOODE and BEAN, Oceanic Ichth., 1895,
p. 84, pl. 25, fig. 96 (N. 39°26' W. 68°03'30", 1782 fathoms).

Macrostoma caudispinosum JORDAN and EVERMANN, Bull. U. S. Nat.
Mus., No. 47, pt. 1, 1896, p. 556 (compiled).

Lampanyctus caudispinosus PARR, Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, 1928, p. 79 (diagnosis in key).

Myctophum elongatus (not COSTA) SMITT, Hist. Scandinav. Fishes, ed.
2, 1893-95, p. 937 (part).

Lampanyctus peculiaris BORODIN, Proc. New England Zool. Club,
vol. 10, Jan. 22, 1929, p. 111. N. 47°40' W. 37°20', 600 fathoms;
Bull. Mus. Comp. Zool., vol. 72, No. 3, Aug. 1931, p. 77 (type).

Depth $5 \frac{1}{8}$; head $3 \frac{2}{5}$, width $2 \frac{2}{5}$. Snout in profile 8 in head; eye 4, greater than snout, equals interorbital; maxillary extends $1 \frac{1}{2}$ eye diameters behind eye though not quite to hind edge of well inclined hind preopercle edge, slender, length $1 \frac{1}{3}$ in head; interorbital 4, low. Gill rakers $5 + 11$, lanceolate, slender, $1 \frac{1}{4}$ in eye; gill filaments $\frac{2}{3}$ of gill rakers.

Scales 36 in lateral line, not enlarged; 3 above, 5 below. Scales very caducous, all fallen.

Apparently small photophore at front eye edge slightly below middle; 2 operculars, upper larger and on line with lower eye edge and pectoral fin origin, lower close behind and below hind maxillary end; 6 pectorals, first interspace twice or more that of others which equidistant; 1 suprapectoral close below lateral line and over first pectoral; 2 subpectorals, lower below pectoral fin origin opposite bases of median pectoral fin rays, upper subpectoral midway between lateral line and pectoral fin origin over lower; ventrals ?; $7 + 4$ anals, all at same level and equidistant, posteroanals behind anal fin base; 2 supraanals, first or lower at last third between ventral and anal fin origins level with first anteroanal, second before anal fin origin and midway in space below lateral line; 1 posterolateral, behind last anteroanal and slightly below lateral line; 3 precaudals, first and second low, at same level, third posterior at end of lateral line.

D. III, 21, I, first branched ray $1 \frac{1}{4}$ in head; adipose fin $4 \frac{4}{5}$;
A. III, 17, I, first branched ray $1 \frac{1}{2}$; caudal $1 \frac{1}{4}$?, well forked;
least depth of caudal peduncle $2 \frac{4}{5}$; pectoral $2 \frac{2}{3}$; ventral $1 \frac{2}{3}$.

Brown, largely uniform. Inside gill opening dusky. Iris pale,
with whitish luminous areas. Fins all pale or whitish.

Atlantic Ocean. Though Goode and Bean give "D. 36" their figure
shows IV simple and 22 branched rays. The photophores have all been
rubbed off of the example here described as well as most of the scales.

Lampanyctus peculiaris Borodin said to be nearest the present species
was founded on an example 145 mm. long. It was distinguished chiefly by
the absence of luminous organs on the head and the adipose fin feather
like or with conspicuous rudimentary rays. Though the dorsal is given
as having 15 rays evidently a variant and possibly the rudimentary rays
were not included.

43768 U. S. N. M. N. 39^o

W. 68^o. Albatross Collection

(155). Length 75 mm.

Lampanyctus margaritiferus (Goode and Bean)

Notoscopelus margaritiferus GOODE and BEAN, Oceanic Ichth., 1895,

p. 85, pl. 25, fig. 98. Off Banquero; Gloucester Donations.

Macrostoma margaritiferum JORDAN and EVERMANN, Bull. U. S. Nat.

Mus., No. 47, pt. 1, 1896, p. 555 (compiled).

Myctophum (Lampanyctus) margaritiferum BRAUER, Zool. Anzeiger,

vol. 28, Nr. 10, Dec. 20, 1904, p. 395 (diagnosis in key);

Deutsch. Tiefsee Exp. Valdivia, vol. 15, Tiefsee-Fische, 1906,

p. 166 (diagnosis in key).

Lampanyctus margaritifer PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, 1928, p. 80 (compiled); Proc. U. S. Nat. Mus.,

vol. 76, 1929, p. 13 (type).

Depth $5 \frac{1}{8}$; head $3 \frac{2}{3}$, width $2 \frac{1}{2}$. Snout $7 \frac{1}{8}$ in head from snout tip; eye $4 \frac{1}{8}$, greater than snout or interorbital; maxillary extends $1 \frac{2}{5}$ eye diameters behind eye though not quite to well inclined hind preopercle edge, slender, length $1 \frac{2}{5}$ in head from snout tip; interorbital $3 \frac{1}{2}$, level. Gill rakers $9 + 19$, lanceolate, slender, equal eye; gill filaments $\frac{3}{5}$ gill rakers.

Scales 42 in lateral line to caudal base; 4 above, 5 below, 15 predorsal to occiput. Pointed scale in pectoral axil $3 \frac{1}{8}$ in fin. Caudal base scaly. Scales with 7 basal radiating striae; circuli fine, complete.

Small narrow antorbital luminous organ at front upper eye edge; 1 minute photophore at front eye edge nearly median; 2 operculars, upper larger and on line with lower eye edge and lower subpectoral; 3 veiled equidistant branchiostegals; 5 pectorals, first interspace longest, last photophore slightly elevated and before ventral fin origin; 1 suprapectoral close below lateral line and behind first pectoral; 2 subpectorals, upper close above pectoral fin origin, lower below and slightly advanced or before bases of lowest pectoral fin rays; 5 ventrals, all in same level; 1 supraventral over first ventral near lower $\frac{2}{5}$ in space between lateral line and first ventral spot; 9 + 7 anals, posteroanals all behind anal fin base; 3 supraanals, first or lowest rather close over fifth ventral posteriorly, second still little posterior, or level with pectoral fin origin, uppermost close below lateral line over median or second though both little before anteroanal; 2 posterolaterals on same level close below lateral line and close together, first or anterior slightly advanced from last anteroanal; 3 precaudals, first and second low, very close at lower rudimentary caudal rays and upper below and behind end of lateral line, separated from second precaudal by interspace. Supracaudal luminous organ long, along most of edge of caudal peduncle.

D. III, 19, I, first branched ray $1 \frac{1}{3}$ in total head length; adipose fin 8; A. III, 16, I, first branched ray $1 \frac{3}{5}$?; caudal $1 \frac{1}{10}$, forked; least depth of caudal peduncle $2 \frac{3}{4}$; pectoral $2 \frac{1}{10}$?; ventral $1 \frac{3}{5}$?

Largely uniform brown. Iris dull brown. Inside gill opening dusky. Fins pale.

43775 U. S. N. M. Off Banquero. Gloucester Donation 933. Schooner
Alice M. Williams. Length 118 mm. Type of Notoscopelus margaritiferus.

Lampanyctus elongatus (Costa)

Scopelus elongatus COSTA, Fauna Napoli, Pesci, vol. 1, 1844, p. 2,

pl. 35. Ercolano. --CANESTRINI, Fauna Italica, Pesci, ^{1874,} p. 126

(Sicily). --STEINDACHNER, Sitz. Ber. Akad. Wiss. Wein, Math.-

Naturw. Kl., vol. 83, pt. 1, 1881, p. 397 (Nice). --STORM,

Vidensk. Selsk. Trondheim, 1883, p. 30. --VINCIGUERRA, Ann. Mus.

Civico Stor. Nat. Genova, vol. 22, 1885, p. 462 (Nice, Genoa,

Palermo). --RAFFAELE, Mitth. Zool. Stat. Neapel, vol. 9, 1889,

p. 185, pl. 7, fig. 11. --LILLJEBORG, Sveriges och Norges Fauna,

Fishes, 1884-91, p. 25. --LÜTKEN, Vidensk. Medd. Naturh. Foren.

Kjöbenhavn, 1891, p. 208 (Trondlyeimsftord); Kon. Dansk. Vidensk.

Selsk. Skrift. Kjöbenhavn, ser. 6, vol. 7, ~~No. 6~~ 1892, p. 264,

fig. 23 (Greenland, N. $3^{\circ}10'$ W. $20^{\circ}30'$; S. 35° E. 19°). --CARUS,

Prodr. Fauna Medit., vol. 2, 1893, p. 565 (compiled). --GOODE and

BEAN, Oceanic Ichth., 1895, p. 83 (Nice). --HOLT and BRYNE, Dep.

Agric. Techn. Instruct. Ireland Sci. Investig., 1910, No. ⁽¹⁹¹¹⁾ 6, p. 24,

fig. 7 (outline) (Irish Atlantic Slope, 375 to 411 fathoms).

Myctophum elongatum COLLETT, Nyt. Mag. Naturw. Christiania, vol. 29,

1884, p. 104 (Thronhjems Fjord). --SMITT, Hist. Scandinavian

Fishes, ed. 2, 1893-95, p. 937, fig. 234 (Norway).

Myctophum (Lampanyctus) elongatum BRAUER, Zool. Anzeiger, vol. 28, Nr. 10,

1904, p. 395 (diagnosis in key); Deutsch. Tiefsee Exp. Valdivia,

vol. 5, Tiefsee-Fische, 1906, p. 232, figs. 152-153 (Gulf of

Guinea; west of Cape Colony). --ZUGMAYER, Res. Camp. Sci. Monaco,

vol. 35, 1911, p. 37 (N. $36^{\circ}6'40''$ W. $10^{\circ}18'$, 4749 meters). --

FAPPENHEIM, Deutsch. Südpolar Exp., vol. 15, Zool. pt. 2, 1914,

p. 196 (off Senegal, 3000 meters). --BARNARD, Ann. South African

Mus., vol. 21, pt. 1, June 1925, p. 238 (off Cape Point).

Lampanyctus elongatus TAANING, Rep. Danish Oceanogr. Exp. Med.,

No. 5, vol. 2, A. 7, 1918, p. 103, fig. 40-41 (Mediterranean,

Messina, Atlantic); Vidensk. Medd. Dansk Naturh. Foren. København,

vol. 86, 1928, p. 64 (diagnosis in key); North Atlantic and

Mediterranean). --PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, Dec. 1928, p. 80 (note); Proc. U. S. Nat. Mus.,

vol. 76, 1929, p. 14 (types of Notoscopelus brachyichir and

Notoscopelus quercinus). --NORMAN, Discovery Rep., vol. 2, 1930,

p. 329 (S. 60°58' W. 48°05', 100-150 meters; S. 2°49'30"

W. 9°25'30", 800-1000 meters; S. 00°56' W. 14°08'30", 250 meters;

N. 4°18'15" W. 16°51', 100-120 meters).

Scopelus crocodilus (not RISSO) VALENCIENNES, Hist. Nat. Poiss.,

vol. 22, 1849, p. (Nice).

Scopelus kroyeri MABM, Vetensk. Selsk. Handl. Göteborg, 1863,

p. 100. Norway; Göteborgs och Bohusläns Fauna, 1877, p. 539.

Notoscopellus brachyichir EIGENMANN and EIGENMANN, Notes San Diego

Biolog. Lab., Nov. 9, 1889, pages unnumbered (p. 3). Cortez

Banks, San Diego, California.

Scopelus pseudocrocodilus MOREAU, Hist. Nat. Poiss. France,

Suppl., 1891, p. 84, fig. 227.

Notoscopelus quercinus GOODE and BEAN, Oceanic Ichth., 1895, p. 83,

pl. 26, fig. 97. Gloucester Fishing vessel; N. Lat. 36° - 41° W.

Long. 67° - 74° , in 677 to 781 fathoms.

Macrostoma quercinum JORDAN and EVERMANN, Bull. U. S. Nat. Mus.,

No. 47, pt. 1, 1896, p. 554 (compiled).

Myctophum (Lampanyctus) quercinum BRAUER, Zool. Anzeiger, vol. 28, Nr. 10,

1904, p. 395 (diagnosis in key); Deutsch. Tiefsee Exp. Valdivia,

vol. 5, Tiefsee-Fische, 1906, p. 166 (diagnosis in key).

Notoscopelus ejectus WAITE, Records Australian Mus., vol. 5, pt. 3,

1904, p. 150, pl. 18, fig. 2. Lord Howe Island.

Macrostoma quercinum japonicum TANAKA, Journ. College Sci. Tokyo,

vol. 23, art. 13, 1908, p. 5, pl. 1, fig. 3. In all probability

off Misaki, Province of Sagami.

Lampanyctus japonicus GILBERT, Mem. Carnegie Mus., vol. 6, No. 2,

Aug. 1913, p. 99 (note).

Depth $4 \frac{2}{3}$ to 6; head $3 \frac{1}{3}$ to $3 \frac{3}{4}$, width $2 \frac{1}{3}$ to $2 \frac{1}{2}$.

Snout 5 to 8 in head from snout tip; eye $3 \frac{7}{8}$ to 4, greater than snout, subequal with interorbital; maxillary extends $1 \frac{2}{5}$ eye diameters behind hind eye edge though not quite to well inclined hind preopercle edge, slender, length $1 \frac{1}{3}$ to $1 \frac{2}{5}$ in head from snout tip; interorbital $3 \frac{3}{5}$ to $3 \frac{2}{3}$, low to level. Gill rakers $7 + 18$, lanceolate, $1 \frac{1}{5}$ in eye; gill filaments $1 \frac{1}{4}$ in gill rakers.

Scales 42 in lateral line to caudal base, not enlarged; 4 above, 4 below, 16 predorsal to occiput. Scales with many as 5 basal radiating striae; circuli very fine, complete.

Antorbital luminous body narrow, along upper front eye edge; small photophore at lower front eye edge; 2 operculars, upper large and on level with lower eye edge and lower subpectoral, lower behind and slightly below hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace longest, all at same level except last which slightly higher or before ventral fin origin; 1 suprapectoral close below lateral line or about upper third between lateral line and pectoral fin origin; 2 subpectorals, first or lower close before middle of pectoral fin base or below bases of lowest pectoral fin rays, upper close and directly over pectoral fin origin; 5 or 6 ventrals all at same level, nearly equidistant; 1 supraventral, about lower third or $2/5$ between lateral line and ventral fin origin; 8 to 10 + 6 to 8, posteroanals all behind anal fin base; 3 supraanals, in slight arc with first or lowest over last ventral, second little higher and nearly or quite level with supraventral and third close below lateral line over second or opposite anal fin origin; 2 posterolaterals, close together below adipose fin at same level and close below lateral line; 3 or 4 precaudals as low pair close together at lower rudimentary caudal rays and upper pair or 1 photophore rather close below end of lateral line. Row of 20 or 21 luminous scales along each side of back. Luminous body below pectoral fin base, 1 or 2 above ventral fin origin and 1 close above anal fin origin.

D. IV, 18, I, first branched ray $1 \frac{1}{5}$ to $1 \frac{2}{5}$ in total head length; adipose fin $5 \frac{1}{5}$ to 6; A. IV, 15, I to III, 17, I, first branched ray $1 \frac{2}{5}$ to 2; caudal $1 \frac{1}{8}$ to $1 \frac{1}{6}$, well forked; least depth of caudal peduncle $2 \frac{1}{2}$ to $3 \frac{1}{3}$; pectoral $2 \frac{1}{4}$ to $2 \frac{1}{2}$; ventral $1 \frac{3}{5}$ to $1 \frac{9}{10}$.

Brown, scale pockets darker to dusky. Iris gray, with whitish luminous bodies. Opercles and inside gill openings blackish. Fins whitish, caudal dusky basally.

Mediterranean, Atlantic and Pacific Oceans.

40067 U. S. N. M. Nice. Florence Museum. Length 117 mm. As Scopelus elongatus.

43789 U. S. N. M. Gloucester Donation. Length 110 mm. Type of Notoscopelus quercinus.

49379 U. S. N. M. Nice. M. Bellotti. No. 179. Length 87 to 92 mm.
4 examples.

76336 U. S. N. M. Cortez Banks, near San Diego, California. C. H. Eigenmann. Length 88 mm. Type of Notoscopellus brachychier.

82132 U. S. N. M. West edge of Grand Bank. Schooner "Lizzie". May 7, 1880. Length 135 mm.

92112 U. S. N. M. From Xiphias gladius stomach, taken in gully between Brown's and Georges Banks. Schooner "Alice M. Doughty". Capt. Richard H. Doughty. July 1, to 13, 1931. W. H. Rich. Length 142 to 153 mm. 3 examples.

92115 U. S. N. M. Same locality as preceding. Schooner "Eleanor". Capt. Thomas Brigham. July 5 to August 5, 1931. W. H. Rich. Length 83 to 90 mm. Two large examples comprising only anterior part of body to anal fin. Both show last ventral photophore and first or lowest supra-anal at connected scales and without the intervening scale of Serpa hoffmanni.

Serpa hoffmanni new species

Notoscopelus quercinus (part) GOODE and BEAN, Oceanic Ichth.,

1895, p. 83 (not fig. 97) (Nos. 43790 and 43791 U. S. N. M.).

Depth $5 \frac{1}{4}$; head $3 \frac{1}{2}$, width $2 \frac{1}{3}$. Snout $6 \frac{1}{5}$ in head; eye 4, greater than snout, equals interorbital; maxillary extends $1 \frac{1}{3}$ eye diameters behind hind eye edge though not quite to well inclined hind preopercle edge, slender, length $1 \frac{1}{4}$ in head; interorbital 4, slightly convex. Gill rakers 6 + 14, slender, lanceolate, $1 \frac{1}{4}$ in eye; gill filaments $\frac{3}{5}$ of gill rakers.

Scales 34? in lateral line to caudal base, not enlarged; 4 above, 4 below, 12 predorsal forward to occiput. Caudal base scaly. Scales with 5 basal radiating striae; circuli very fine, complete.

Small antorbital photophore at median front eye edge; 2 operculars, upper larger and in line with lower eye edge and pectoral fin origin, lower behind and close below hind end of maxillary; 3 veiled equidistant branchiostegals or median slightly nearer posterior; 5 pectorals, first interspace equal to that between middle and last photophores, all on level except fifth which slightly raised and close before ventral fin origin; 1 suprapectoral close below lateral line and nearly in oblique line with subpectorals; 2 subpectorals, first or lower below upper close before bases of lowest pectoral fin ray bases, upper close above pectoral fin origin; 5 ventrals, nearly equidistant, level; 1 supraventral at upper 2/5 above space below lateral line and ventral fin origin, above level of upper subpectoral and median supraanal; 9 + 5 anals, posteroanals behind anal fin base; 3 supraanals, first over and slightly posterior from last ventral from which separated by single scale, second or median level with upper subpectoral over anal fin origin, third close below lateral line still above second supraanal; 2 posterolaterals, level, close below lateral line, first over last anteroanal; 3 precaudals, first and second close at lower rudimentary caudal rays, nearly level and third posterior and rather close below end of lateral line. About 6 luminous supra-caudal bodies on rudimentary rays and 8 infracaudal. Along upper side of back 18 luminous bodies, one to each scale, anteriorly 8 more on scales along and parallel with front of lateral line. Luminous body below pectoral base, 2 above ventral fin base and 1 above anal fin origin.

D. III, 20, I, first branched ray $1 \frac{2}{3}$? in head; adipose fin $5 \frac{1}{5}$; A. III, 16, I, first branched ray $1 \frac{2}{3}$?; caudal $1 \frac{1}{5}$? forked; least depth of caudal peduncle $2 \frac{3}{4}$; pectoral $2 \frac{2}{5}$?; ventral $1 \frac{4}{5}$?

Brown, nearly uniform. Iris gray, with pale luminous areas.

Fins pale or whitish.

Diagnosis. Related to Lampanyctus elongatus but distinguished chiefly by the higher supraventral photophore and the first supraanal separated from the fifth or last ventral by a scale width.

The accompanying figure is based on a paratype originally evidently in Gilbert's possession and not now in the collection of the United States National Museum or returned from Stanford University Museum. According to the scale length given it is a much smaller specimen than the type. Most of the details set forth have been verified in comparison.

Type, No. 43790 U. S. N. M.

43790 U. S. N. M. N. $36^{\circ}45'$ W. $74^{\circ}28'39''$, Gulf Stream. In 781 fathoms.

Albatross Collection (2731). Length 80 mm. Type.

43791 U. S. N. M. N. $41^{\circ}47'$ W. $37^{\circ}30'$. In 677 fathoms. Albatross

Collection (2528). Length 48 mm. Though in poor preservation I have been able to ascertain that the supraventral photophore is above the middle of the space between the lateral line and the ventral fin origin.

The present specimen may therefore be regarded as a paratype.

Named for Prof.

Hoffman of Lignan University, China.

Lampanyctus resplendens Richardson

Lampanyctus resplendens RICHARDSON, Ichth. Voy. Erebus and Terror,

1844-48 (before March 1, 1845), p. 42, pl. 27, figs. 16-18.

Gulf of Guinea. --TAANING, Vidensk. Medd. Dansk Naturh. Foren.

Köbenhavn, vol. 86, 1928, p. 64 (North Atlantic; diagnosis in

key). --FARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3,

Dec. 1928, p. 80 (compiled).

Scopelus resplendens GÜNTHER, Cat. Fishes Brit. Mus., vol. 5, 1864,

p. 415 (type; Gulf of Guinea). --COLLETT, Den norske Nordhavn

Exp. Zool. Fisk., 1880, p. .

Notoscopelus resplendens GOODE and BEAN, Oceanic Ichth., 1895,

p. 83, pl. 25, fig. 94 (compiled; figure from RICHARDSON).

Scopelus crocodilus (not RISSO) VALENCIENNES, Hist. Nat. Poiss.,

vol. 22, 1849, p. 447 (part).

Depth $4 \frac{1}{2}$; head $3 \frac{2}{5}$. Snout $7 \frac{1}{2}$ in head; eye $4 \frac{1}{3}$, greatly exceeds snout; maxillary extends $1 \frac{2}{3}$ eye diameters behind eye, narrow, length $1 \frac{1}{3}$ in head; interorbital low.

Scales 38 in lateral line, cycloid. Scales with 6 basal radiating striae, edge scalloped; circuli fine, complete.

Opercular photophore slightly below level of eye or lower subpectoral; 3 branchiostegals; 7 pectorals, little inclined upward posteriorly; 1 suprapectoral, near upper third in space between lateral line and pectoral fin origin, in inclined line with lower subpectoral and fifth pectoral spot; 2 subpectorals, upper about lower third between lateral line and pectoral fin origin, in inclined line forward including lower subpectoral before and just above middle of pectoral fin base and third pectoral spot; 5 ventrals, last little elevated; 1 supraventral, nearly midway between lateral line; 16 anals, continuous, level, 6 posteroanals behind anal fin base; 3 supraanals in broad triangle, first or lower little above and behind last ventral, second level with supraventral or much nearer and below upper which close below lateral line, both forming vertical series with anteroanal; 2 posterolaterals, side by side and rather close below lateral line; 3 precaudals, first and second low and side by side, upper little posterior and close below end of lateral line. Row of 12 luminous bodies, each above anterior tube of lateral line; 12 more on row of scales immediately above course of lateral line, first begins after last of lower series.

D. III, 20, first branched ray $1 \frac{2}{3}$ in head; adipose fin $5 \frac{1}{5}$;
 A. III, 15, first branched ray 2; caudal $1 \frac{1}{10}$, forked; least depth of
 caudal peduncle $2 \frac{2}{5}$; pectoral $1 \frac{3}{5}$; ventral 2.

Length 100 mm. (Richardson.)

North Atlantic.

Atlantic Ocean. Taaning gives 6 or 7 supracaudal luminous bodies
 and as many infracaudals, luminous scale below lower subpectoral, 1 or
 2 between ventral fin and supraventral photophore, 1 before anteroanals,
 on back 2 longitudinal rows of about 25 scales and laterally above fore-
 part of lateral line 10, below posterolaterals 2 and 2 in supraanal series.

Lampanyctus castaneus (Goode and Bean)

Notoscopelus castaneus GOODE and BEAN, Oceanic Ichth., 1895, p. 85,

pl. 25, fig. 95. N. $39^{\circ}57'$ W. $70^{\circ}37'$, 192 fathoms; Gloucester

Donations.

Macrostoma castaneum JORDAN and EVERMANN, Bull. U. S. Nat. Mus.,

No. 47, pt. 1, 1896, p. 556 (compiled).

Myctophum (Lampanyctus) castaneus BRAUER, Deutsch. Tiefsee Exp.

Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 166 (diagnosis in key).

Lampanyctus castaneus PARR, Bull. Bingham Oceanogr. Collection, vol. 3,

art. 3, 1928, p. 81 (note); Proc. U. S. Nat. Mus., vol. 76, 1929,

p. 14 (type).

Depth $4 \frac{7}{8}$ to 5; head $3 \frac{4}{5}$ to 4, width 2 to $2 \frac{1}{8}$. Snout in profile 7 to $7 \frac{1}{4}$ in head; eye $3 \frac{7}{8}$ to $4 \frac{3}{5}$, greater than snout, equals interorbital; maxillary reaches $1 \frac{1}{2}$ to $1 \frac{3}{5}$ eye diameters beyond eye though not quite to greatly inclined hind preopercle edge, slender, length $1 \frac{1}{3}$ to $1 \frac{2}{5}$ in head from snout tip; interorbital $3 \frac{1}{4}$ to 4, low. Gill rakers 11 + 18, lanceolate, slender, equals eye; gill filaments $\frac{3}{5}$ of gill rakers.

Scales 42 in lateral line to caudal base, not enlarged; 3 above, 5 below, 12? predorsal to occiput. Ventral with pointed axillary scale $3 \frac{1}{6}$ in fin. Caudal base scaly. Scales very caducous, most all fallen.

Small entorbital narrow luminous body along upper front eye edge; small preorbital photophore at lower front eye edge; 2 operculars, upper larger, in line from lower eye edge and lower subpectoral; 3 large veiled equidistant basibranchials; 5 pectorals, first interspace twice or more than others, fifth pectoral before and slightly posterior from first or lower subpectoral; 2 subpectorals, first or lower below pectoral fin origin opposite and before bases of lowest pectoral fin rays; upper subpectoral close above pectoral fin origin over lower subpectoral and both well before second pectoral photophore; 5 ventrals, equidistant, close, at same level; 1 supraventral, little nearer ventral fin origin than lateral line or at level of upper subpectoral; 9 + 8 anals, first anteroanal slightly below level of others, posteroanals all behind anal fin base; 3 supraanals, first or lowest little higher than lower subpectoral and behind last ventral, second still higher or level with supraventral below third or uppermost which close below lateral line opposite vent; 3 posterolaterals close together, about same level close below lateral line, first above eighth anteroanal; 3 precaudals, first low and at same level, very close together, third rather close below and behind end of lateral line. Long luminous supracaudal organ with 3 small bodies at upper rudimentary caudal rays; 22 luminous scales along front of back. Luminous bodies below upper opercular photophores, below pectoral base, above ventral base and above anal origin.

D. III, 17, I or III, 18, I, first branched ray $1 \frac{2}{5}$? in head; adipose fin $4 \frac{1}{2}$; A. III, 16, I, first branched ray $1 \frac{1}{2}$; caudal evidently little greater than head, well forked; least depth of caudal peduncle $2 \frac{3}{4}$ to $2 \frac{4}{5}$; pectoral $2 \frac{1}{6}$; ventral $1 \frac{4}{5}$.

Color brownish, scale pockets darker. Inside of gill opening dusky. Iris dark brown, with pale luminous areas. Fins pale to whitish.

Atlantic Ocean.

31706 U. S. N. M. Bureau of Fisheries (1113). Length 130 mm. In very poor preservation.

44518 U. S. N. M. Le Have Bank. Gloucester Donation. (Questioned as 21688 U. S. N. M.?) Length 151 mm. Very poorly preserved.

Lampanyctus supralateralis Parr

Lampanyctus supralateralis PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, Dec. 1928, p. (81) 94, fig. 12. N. 23° to 24°

W. 76° to 77° , 7000 to 8000 feet.

Depth $4 \frac{2}{5}$; head 3. Snout $7 \frac{1}{5}$ in head from snout tip; eye $3 \frac{1}{3}$, greatly exceeds snout; maxillary extends $\frac{3}{5}$ eye diameter behind eye, slender, length $1 \frac{3}{5}$ in head from snout tip; interorbital low, eye greatly impinging on upper profile.

Scales 35 in lateral line, not conspicuously enlarged on caudal peduncle.

Opercular photophores 2, upper below level of eye, little above line from eye to lower subpectoral; 5 pectorals, first interval longest, fourth spot elevated over and before fifth pectoral until level with lower subpectoral; 1 suprapectoral, close above lateral line, in nearly vertical line with subpectorals passing well before second pectoral; 2 subpectorals, lower subpectoral little nearer second pectoral than upper, which close before upper base of pectoral fin; 5 ventrals, second elevated though little lower than fourth pectoral and with other 3 spots forms slightly inclined series down and back to fourth; 1 supra-ventral, level with upper subpectoral little before first ventral; anals 5 + 4, last anteroanal slightly elevated, posteroanals behind anal fin base; 3 supraanals, series slightly angulate, first and second spots form inclined line with last ventral spot, equally spaced so median midway in space to lateral line, third close above lateral line nearly over and little behind median; 2 posterolaterals, in inclined line passing behind last anteroanal, first or lower spot closer to last anteroanal and upper spot close above lateral line; 3 precaudals, lower 2 close and third close above end of lateral line. Supracaudal luminous scales 1 to 3, infracaudal 3 to 6. Four luminous plates along each side of anal fin base.

D. 13; A. 15, inserted close behind dorsal fin base; pectoral $2 \frac{3}{5}$ in body without caudal.

Length 28 mm. without caudal. (Parr.)

Western Atlantic.

Serpa blacki new species

Depth $3 \frac{7}{8}$ to $4 \frac{1}{2}$; head $2 \frac{3}{5}$ to $2 \frac{7}{8}$, width $2 \frac{2}{5}$ to $2 \frac{3}{5}$.
Snout 6 to $7 \frac{1}{5}$ in head from snout tip; eye $3 \frac{1}{2}$ to $3 \frac{4}{5}$, greater than snout or interorbital; maxillary reaches $\frac{3}{4}$ to $\frac{7}{8}$ eye diameters behind eye though not to slightly inclined hind preopercle edge, expansion $2 \frac{4}{5}$ to $3 \frac{1}{4}$ in eye, length $1 \frac{1}{2}$ in head from snout tip; interorbital $4 \frac{1}{4}$ to 6, level. Gill rakers 10 + 14, slender, lanceolate, $1 \frac{2}{5}$ in eye; gill filaments $1 \frac{1}{2}$ in gill rakers.

Scales 30 in lateral line, not enlarged; 3 above, 4 below, 11 predorsal forward to occiput. Caudal base scaly. Scales with 3 basal radiating striae; circuli fine, complete.

Small antorbital photophore at front eye edge; 2 operculars, greatly separated, upper little larger, high or on line with lower eye edge and upper subpectoral, lower behind and little below hind maxillary end; 3 veiled equidistant branchiostegals; 5 pectorals, first interspace longest, fourth well elevated or just below level of pectoral fin base and over last pectoral anteriorly; 1 suprapectoral on lateral line little before first or lower subpectoral; 2 wide set subpectorals, first or lower slightly advanced and below upper, though slightly nearer second pectoral than upper subpectoral, which close before bases of median pectoral fin rays; 5 ventrals, second elevated though much lower than fourth pectoral, little nearer third than first; 1 supraventral about upper $2/5$ between lateral line and ventral fin base; 5 + 4 anals, posteroanals all behind anal fin base; 3 supraanals, first behind last ventral and slightly below level of second ventral, second little above and little posterior also greatly closer to first, third on lateral line little behind anal fin origin; 2 posterolaterals, first or lower little higher than last anteroanal and posterior, also much nearer last anteroanal, upper on lateral line slightly posterior; 3 precaudals, 2 lower close at lower rudimentary caudal rays with second little elevated and third little above end of lateral line. Supracaudal luminous scales 2, infracaudals 2 to 4, also 5 or 6 along each side of front anal base.

D. III, 9, I or III, 10, I, first branched ray $1 \frac{4}{5}$ to $1 \frac{7}{8}$ in total head length; adipose fin $4 \frac{1}{3}$ to $5 \frac{1}{5}$; A. III, 10, I or III, 12, I, first branched ray 2 to $2 \frac{3}{4}$?; caudal $1 \frac{1}{4}$? forked; least depth of caudal peduncle $3 \frac{1}{5}$ to $3 \frac{1}{2}$; pectoral $1 \frac{1}{8}$ to $1 \frac{1}{3}$; ventral $2 \frac{1}{8}$ to $2 \frac{1}{5}$.

Brown, scale pockets variably darker. Inside gill opening blackish. Iris gray, with whitish luminous areas. Fins pale or whitish.

Diagnosis. Greatly like Lampanyctus longipes (Brauer) except that the supraventral photophore much lower or its position about upper $\frac{2}{5}$ in space between ventral origin and lateral line (very close below lateral line in Lampanyctus longipes). In this respect it is more like Lampanyctus nigrum (Günther) but that species with 7 posteroanal photophores, the present species like Lampanyctus longipes or only with 3 or 4. Moreover the suprapectoral of the present species is variably above or close below the beginning of the lateral line. It further differs from Lampanyctus longipes in the absence of postocular photophores and its more widely spaced opercular photophores, the upper quite high or nearly level with lower eye edge.

Type, No. U. S. N. M.

D. 5507. Camp Overton Light, Iligan Bay (Mindanao), S. 1° E., 8.6 miles (N. $8^{\circ}21'12''$ E. $124^{\circ}12'6''$). In 425 fathoms. August 4, 1909. Length 68 to 80 mm. 3 examples. Type and paratypes.

D. 5185. Lusaran Light, N. 23° E., 25.50 miles (N. $10^{\circ}5'45''$ E. $122^{\circ}18'30''$), between Panay and Negros. In 638 fathoms. March 30, 1908. Length 33 mm.

D. 5227. Port Origen, S. 44° E., 18.30 miles (N. $12^{\circ}53'45''$ E. $121^{\circ}52'30''$), east of Mindoro. In 322 fathoms. May 5, 1908. Length 32 to 42 mm. 2 examples.

Lampanyctus photothorax Parr

Lampanyctus photothorax PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, 1928, (p. (81) 95, fig. 13. N. 23° to 32°

W. 64° to 77° , 4000 to 10000 feet. --NORMAN, Discovery Rep., vol. 2,

1930, p. 329 (S. $35^{\circ}14'$ E. $6^{\circ}49'$, 850 to 1100 meters; S. $00^{\circ}46'$

E. $5^{\circ}49'15''$, 850 to 950 meters).

Depth $4 \frac{1}{4}$; head 3. Snout 10 in head from snout tip; eye 3, greatly exceeds snout; maxillary extends $\frac{1}{2}$ eye diameter behind eye, length $1 \frac{3}{5}$ in head from snout tip; interorbital low, eye impinging on upper profile.

Scales 36 or 37 in lateral line, not conspicuously enlarged on tail.

Anal fin 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1750, 1751, 1752, 1753, 1754, 1755, 1756, 1757, 1758, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085

Three minute photophores along hind eye edge sometimes; 5 pectorals, first interval longest, fourth elevated till about level with first supraanal, over last pectoral interval; 1 suprapectoral close below lateral line in line with 2 subpectorals, which wide set, upper close before pectoral fin base and lower above and little before second pectoral spot, though nearer latter than upper subpectoral; 5 ventrals, second elevated till but little lower than fourth pectoral, behind first ventral; 1 supraventral close below lateral line over first ventral; anals 4 to 7 + 4 or 5, sometimes last anteroanal elevated, posteroanals behind anal fin base; 3 supraanals, in broadly angulate series, lower or first above or somewhat before last ventral, second level with upper subpectoral which close above lateral line; 2 posterolaterals, in inclined line passing behind last anteroanal, first much nearer last anteroanal and second close above lateral line; 3 precaudals, first and second close, low, third close above end of lateral line. Variable luminous bodies, as 1 scale above base of pectoral fin, another close below lower subpectoral photophore, 1 above ventral fin axil, 3 along dorsal fin base, 3 larger ones along anal fin base. Supracaudal luminous scales 3, infracaudals 3.

D. 13; A. 14, fin origin below hind basal end of dorsal; pectoral $2 \frac{2}{5}$ in combined head and body to caudal base.

Length to 56 mm. without caudal. (Parr.)

North and South Atlantic, West Indies.

Lampanyctus longipes (Brauer)

Myctophum (Lampanyctus) longipes BRAUER, Deutsch. Tiefsee Exp.

Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 236, text fig. 155.

N. $31^{\circ}59'3''$ W. $15^{\circ}5'$, off Madeira; N. $0^{\circ}25'8''$ E. $7^{\circ}0'3''$, Gulf of

Guinea; S. $26^{\circ}3'6''$ E. $93^{\circ}43'7''$; S. $10^{\circ}8'2''$ E. $97^{\circ}14'9''$ south and

north of Cocos Islands; N. $7^{\circ}1'2''$ E. $85^{\circ}56'5''$, Bay of Bengal;

N. $4^{\circ}56'$ E. $78^{\circ}15'3''$ south of Ceylon; S. $4^{\circ}5'8''$ E. $73^{\circ}24'8''$;

S. $4^{\circ}5'8''$ E. $70^{\circ}1'9''$, Chagos Archipelago; S. $2^{\circ}43'8''$ E. $61^{\circ}12'6''$;

S. $4^{\circ}34'8''$ E. $53^{\circ}42'8''$, Seychelles.

Lampanyctus longipes PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 82 (note).

Lampanyctus pyrsobolus longipes TAANING, Vidensk. Medd. Dansk Naturh.

Foren., vol. 86, 1928, 65 (diagnosis in key).

Depth $3 \frac{7}{8}$ to 4; head $3 \frac{1}{8}$ to $3 \frac{1}{5}$, width 2 to $2 \frac{1}{5}$. Snout $5 \frac{3}{5}$ to $6 \frac{2}{3}$ in head; eye $2 \frac{4}{5}$ to $3 \frac{1}{10}$, greater than snout or interorbital; maxillary reaches but slightly behind eye but falls well short of nearly vertical hind preopercle edge, expansion $2 \frac{1}{3}$ to 3 in eye, length $1 \frac{3}{5}$ to $1 \frac{4}{5}$ in head; interorbital 4 to $4 \frac{1}{5}$, level. Gill rakers 5 + 14, lanceolate, slender, $1 \frac{3}{4}$ in eye; gill filaments $\frac{2}{3}$ gill rakers.

Scales 31 or 32 in lateral line to caudal base, not enlarged though with hind ends straight or truncate; 4 above, 3 below, 10 predorsal forward to occiput. Ventral with small axillary scale $3 \frac{3}{4}$ in fin. Caudal base scaly. Scales with 7 short basal marginal radiating striae; circuli fine, complete.

Large antorbital luminous body median on snout above and opposite greater upper front orbital edge; 3 postorbital photophores rather close behind eye and parallel with its hind edge, also fourth lower close along lower posterior edge; 2 opercles, upper larger and on line from lower eye edge passing about midway between subpectorals, lower well below hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace longest, fourth spots well elevated though slightly lower than upper subpectoral over interspace between third and fifth pectorals; 1 suprapectoral close below lateral line over to slightly behind upper subpectoral; 2 subpectorals, first or lower slightly advanced from upper, little nearer upper than pectorals; 5 ventrals, second elevated nearly level with fourth pectoral over interspace between first and third; 5 + 4 anals, first interspace of anteroanals longest, posteroanals all behind anal fin base; 3 supraanals, first or lowest over and slightly before fifth ventral, second little higher over vent and third close above lateral line opposite anal fin origin; 2 posterolaterals, first or lower closer to last anteroanal slightly behind last anal ray base, upper close above lateral line little before first posteroanal; 3 precaudals, first and second at bases of lower rudimentary caudal rays with second slightly elevated, third close above end of lateral line. Supracaudal luminous scales 2, infracaudals 2. Luminous scale in each ventral axil and 1 or 2 at front of anal fin.

D. III, 9, I, first branched ray $1 \frac{1}{2}$ to $1 \frac{3}{5}$ in head;
 adipose fin $3 \frac{1}{8}$ to $3 \frac{1}{3}$; A. III, 9, I to III, 10, I, first branched
 ray $2 \frac{1}{2}$?; caudal forked; least depth of caudal peduncle $2 \frac{1}{5}$ to
 $2 \frac{2}{5}$; pectoral $1 \frac{1}{5}$; ventral $1 \frac{1}{2}$ to $1 \frac{4}{5}$.

Brown. Muzzle, inclusive of mandible, whitish. Iris gray with
 whitish luminous areas. Fins all whitish.

Atlantic and Indian Oceans. Brauer gives anal photophores 4 to 6
 + 3 to 5, D. 11 to 13, A. 13 to 15.

D. 5544. Coronado Point, S. 37° W., 21.5 miles (N. $8^{\circ}16'30''$ E. $122^{\circ}26'30''$),
 northern Mindanao. In 759 fathoms. September 6, 1909. Length 57 mm.

D. 5185. Lusaran Light, N. 23° E., 25.50 miles (N. $10^{\circ}5'45''$ E. $122^{\circ}18'30''$),
 between Panay and Negros. In 638 fathoms. March 30, 1908. Length 40 mm.

Lampanyctus gaussi (Brauer)

Myctophum (Lampanyctus) gaussi BRAUER, Deutsch. Tiefsee Exp.

Valdivia, vol. 5, Tiefsee-Fische, 1906, p. 235, text fig. 154.

Deutschen Südpol-Expedition. --PAPPENHEIM, Deutsch. Südpolar Exp.,
 vol. 15, Zool. pt. 7, 1914, p. 196 (S. $14^{\circ}3'$ W. $19^{\circ}10'$, 1900 meters;
 S. $32^{\circ}8'$ W. $8^{\circ}28'$, 1000 meters; N. $0^{\circ}46'$ W. $18^{\circ}59'$, 3000 meters;
 N. $5^{\circ}27'$ W. $21^{\circ}41'$, 1500 meters).

Lampanyctus gaussi PARR, Bull. Bingham Oceanogr. Collection, ser. 3,

art. 3, Dec. 1928, p. 82 (note).

Lampanyctus gaussi var. mediterranea BORODIN, Bull. Vanderbilt Oceanogr.

Mus., vol. 1, art. 1, 1928, p. 12. Sardina, Mediterranean Sea.

Depth $4 \frac{4}{5}$; head $3 \frac{1}{2}$. Snout 6 in head; eye $3 \frac{4}{5}$, greater than snout; maxillary reaches not quite eye diameter beyond eye and quite to hind edge of steeply inclined preopercle edge, length $1 \frac{2}{5}$ in head; inter-orbital depressed, apparently level.

Scales cycloid.

Small antorbital photophore slightly inferior on front eye edge;
 2 operculars, upper little larger and in line with lower eye edge and
 lower subpectoral, lower behind and little below hind maxillary end;
 3 equidistant veiled branchiostegals 5 pectorals, first interspace longest,
 fourth spot elevated though not quite level with upper subpectoral but
 little behind third pectoral which quite close behind second; 1 supra-
 pectoral, close below lateral line before though on line with subpectoral;
 2 subpectorals, upper close before bases of superomedian pectoral fin
 rays; 6 ventrals, second elevated till level with lower subpectoral and
 little behind first ventral; 1 supraventral close below lateral line over
 and slightly before second ventral; 4 to 6 + 5 or 6 anals, posteroanals
 behind ventral fin base; 3 supraanals, first or lowest higher than second
 ventral over and slightly behind fifth ventral, second still ^{little}/higher or
 midway in line with sixth ventral and uppermost close below lateral line
 opposite anal fin origin; 2 posteroanals, first or lower behind and above
 last anteroanal and upper close below lateral line opposite adipose fin
 origin; 4 precaudals, first 2 low, third little higher and uppermost
 close below end of lateral line. Each side of dorsal and anal bases.
 3 luminous scales, 1 between last pectoral and first ventral photophores,
 6 infracaudals besides upper and lower rudimentary caudal rays.

D. IV, 10, first branched ray $1 \frac{3}{4}$ in head; adipose fin 3; A. III,
 11, first branched ray 2; caudal 1, deeply forked; least depth of caudal
 peduncle $2 \frac{7}{8}$; ventral 2; pectoral reaches middle of anal, $2 \frac{3}{4}$ in
 combined head and body to caudal base. Length 38 mm. (Brauer.)

Atlantic Ocean.

Lampanyctus güntheri Goode and Bean

Lampanyctus güntheri GOODE and BEAN, Oceanic Ichth., 1895,

p. 79, pl. 24, fig. 90. Gloucester Fleet. --WAITE, Trans.

New Zealand Inst., vol. 42, 1909, p. 372 (Kermadec Islands). --

PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3,

1928, p. 82 (diagnosis in key); Proc. U. S. Nat. Mus., vol. 76,

1929, p. 14, fig. 5 (type). --BORODIN, Bull. Mus. Comp. Zool.,

vol. 72, No. 3, Aug. 1931, p. 77 (N. 33° W. 64°, 1200 meters;

N. 37° W. 67°12', 1500 meters).

Lampanyctus güntheri JORDAN and EVERMANN, Bull. U. S. Nat. Mus.,

No. 47, pt. 1, 1896, p. 559 (compiled).

Myctophum (Lampanyctus) güntheri BRAUER, Zool. Anzeiger, vol. 28, Nr. 10,

1904, p. 395 (diagnosis in key); Deutsch. Tiefsee Exp. Valdivia,

vol. 15, Tiefsee-Fische, 1906, p. 166 (diagnosis in key).

Myctophum (Lampanyctus) güntheri PAPPENHEIM, Deutsch. Südpolar Exp.,

vol. 15, Zool. pt. 7, 1914, p. 196 (S. 14°3' W. 19°10', south

west of Ascension Island, 1900 meters; N. 17°28' W. 29°42',

north west Cape Verde Islands, 3000 meters).

Lampanyctus g           TAANING, Vidensk. Medd. Dansk Naturh. Foren.

K          , vol. 86, 1928, p. 65 (North Atlantic; diagnosis in key). --NORMAN, Discovery Rep., vol. 2, 1930, p. 329 (S. 48  09' W. 52  50', 90 meters; S. 45  06' W. 49  , 90 meters; S. 39  50'30" W. 36  23', 1500 meters; S. 46  36'30" W. 45  07', 40 meters; S. 40  34'30" W. 36  35'30", 152 meters; S. 39  16'30" W. 30  26', 124 meters; S. 18  37' E. 10  46', 100 to 150 meters; S. 00  46' E. 5  49'15", 850 to 950 meters; S. 2  13' E. 1  52', 71 meters; S. 3  06'30" W. 3  53', 125 meters; S. 00  56' W. 14  08'30", 250 meters; N. 3  04'45" W. 16  52', 125 to 225 meters; N. 4  18'15" W. 16  51', 100 to 120 meters; N. 8  12' W. 18  49', 120 meters; N. 12  08' W. 20  53'30", 163 meters).

Lampanyctus melanothorax PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, 1928, p. (82) 98, fig. 14. N. 21   to 24   W. 71   to 77  , 4000 to 8000 feet.

Depth $5 \frac{1}{4}$ to $5 \frac{2}{5}$; head $3 \frac{1}{2}$, width $2 \frac{2}{3}$ to $2 \frac{3}{4}$. Snout 7 to 8 in head; eye $4 \frac{1}{8}$, greater than snout, $1 \frac{1}{5}$ in interorbital; maxillary extends back $1 \frac{1}{8}$ to $1 \frac{2}{3}$ eye diameters behind eye though not quite to well inclined hind preopercle edge, slender, length $1 \frac{1}{3}$ to $1 \frac{2}{5}$ in head; interorbital $3 \frac{1}{2}$ to 4, low. Gill rakers 6 + 12, lanceolate, slender, equal eye; gill filaments $\frac{1}{2}$ gill rakers.

Scales 38 in lateral line, well enlarged; 3 above, 4 below, 15 predorsal to occiput. Scales with 4 basal radiating striae; circuli very fine; complete.

Small median antorbital luminous photophore little below middle at front eye edge; 2 operculars, upper in line with lower eye edge and lower subpectoral, lower below and behind hind maxillary end, equally large and distinct as upper; 3 veiled equidistant branchiostegals; 5 pectorals, first interspace longest, fourth photophore over and little posterior from third or just below level of pectoral fin base; 1 suprapectoral close below lateral line before and on line with both subpectorals; lower subpectoral about midway between upper and second pectoral, upper opposite and close before upper median pectoral fin ray bases; 5 ventrals, second little elevated or level with fourth pectoral, behind second pectoral spot; 1 supraventral close below lateral line opposite first ventral; 5 + 5 or 6 anals, posteroanals behind anal fin base; 3 supraanals, first lowest though little above level of second ventral and over space between fourth and fifth ventrals, second still little higher and third close below lateral line before first anteroanal; 2 posterolaterals, lower above and behind last anteroanal and upper close below lateral line before front of adipose fin; 3 or 4 precaudals, last or fourth close behind end of lateral line, others little inclined progressively along lower rudimentary caudal rays. Infracaudal luminous bodies 5 on lower rudimentary caudal rays, also 6 luminous scales anteriorly; 6 luminous bodies along each side of dorsal base, 3 along front of adipose fin basally, 3 or 4 along anal base and small one in ventral fin axil.

D. III, 10, I, first branched ray $1 \frac{1}{4}$ in head; adipose fin $3 \frac{1}{2}$ to $4 \frac{2}{5}$; A. III, 11, I, first branched ray $2 \frac{1}{10}$; caudal $1 \frac{1}{6}$?, well forked; least depth of caudal peduncle $3 \frac{1}{4}$ to $3 \frac{1}{2}$; ventral 2?; pectoral $3 \frac{1}{8}$? in combined head and body to caudal base.

Brown. Iris pale. Fins all paler than body or whitish. Inside gill opening dusky.

Atlantic, Pacific and Antarctic Oceans. According to Parr the anal is furnished with 3 large basal luminous plates, usually 3 or 4 smaller on dorsal base, 1 or 2 minute plates also before adipose fin and latter basally with high luminous plate; 5 supracaudal spine-supported luminous glands; 5 to 7 small flat infracaudal luminous scales behind anal fin, with 7 or 8 spine supported luminous glands at front edge of caudal.

43777 U. S. N. M. Gloucester Fleet (199). Length 48 mm. Type of Lampanyctus güntheri.

86128 U. S. N. M. Gulf of Mexico. Grampus Collection (10482).
March 22, 1917. Length 49 mm.

89909 U. S. N. M. N. 33° W. 64° . Museum of Comparative Zoology.
Station 322. Length 65 mm. Caudal longer than head or $2 \frac{4}{5}$ in combined head and trunk to caudal base; pectoral $2 \frac{2}{5}$.

Lampanyctus subpectoralis Parr

Lampanyctus subpectoralis PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, 1928, p. (82) 101, fig. 15. N. $24^{\circ}29'$ W. $77^{\circ}29'$,

8000 feet.

Depth $5 \frac{1}{4}$; head $3 \frac{3}{4}$. Snout $7 \frac{1}{2}$ in head from snout tip; eye 5, greater than snout; maxillary extends $1 \frac{3}{4}$ eye diameters behind eye, narrow, length $1 \frac{1}{3}$ in head from snout tip; interorbital low.

Scales 37 in lateral line, greatly enlarged on tail.

Opercular photophores 2, upper nearly level with lower eye edge; 5 pectorals, interval between third and fifth longest, fourth spot little above level of lower subpectoral, close behind or above third spot; 1 suprapectoral little below lateral line before upper subpectoral; 2 subpectorals, lower before and little nearer second pectoral, upper advanced and little before and below pectoral fin origin; 5 ventrals, second elevated till level with lower subpectoral; 1 supraventral, close below lateral line, little before first ventral; anals 5 + 6, level, posteroanals behind anal fin base; 3 supraanals, first above last ventral interspace, higher than fourth pectoral, second higher and behind last ventral, uppermost close below lateral line well before first anteroanal; 2 posterolaterals, in inclined line passing before last anteroanal, though first spot nearer latter than uppermost close below lateral line; 4 precaudals, lower 2 close, side by side, third little higher and posterior, fourth over third below end of lateral line. Supracaudal luminous scales 5 and vestige, infracaudals 12. Luminous scale close below pectoral base, one in ventral axil and 3 along each side of dorsal and anal bases, latter larger.

D. 13; A. 15, origin opposite last third of dorsal base; least depth of caudal peduncle $3 \frac{4}{5}$ in total head; pectorals damaged, probably quite long.

Length without caudal 35 mm. (Parr.) Western Atlantic.

Lampanyctus photonotus Parr

Lampanyctus photonotus PARR, Bull Bingham Oceanogr. Collection,

vol. 3, art. 3, 1928, p. (83) 102. N. $22^{\circ}43'$ W. $74^{\circ}23'$, 8000 feet.

Depth $5 \frac{1}{5}$; head $3 \frac{3}{4}$. Snout $10 \frac{1}{5}$ in head from snout tip; eye $6 \frac{7}{8}$, greater than snout; maxillary extends 3 eye diameters behind eye, length $1 \frac{2}{5}$ in head from snout tip; interorbital very low.

Scales 37 in lateral line, scarcely enlarged on caudal peduncle.

Cheek with 2 photophores, upper level with eye center and midway in space to lower as measured in vertical, lower above and little before hind maxillary end; 5 pectorals, fourth elevated level with pectoral fin origin or over last pectoral interval, first pectoral interval longest, third shortest; 1 suprapectoral, close below lateral line, well before subpectorals; 2 subpectorals, in inclined line with suprapectoral and second pectoral, close together before pectoral fin base; 4 ventrals, level; 1 supraventral, nearly level with fourth pectoral, over first ventral; anals 6 + 7, anteroanals curved upward, posteroanals all behind anal fin base and continuous with precaudals; 3 supraanals, in broadly angulate series, first and second level with supraventral, first over second ventral interval, second behind last ventral spot and third close below lateral line over first anteroanal; 2 posterolaterals, in inclined line with last anteroanal, first or lower close above last anteroanal, upper close below lateral line; 4 precaudals, first slightly nearer margin of infracaudal scales than seventh posteroanal, upper spot at end of lateral line. Dorsal series of 19 photophores along each side of back from nape till behind dorsal fin, 16 in main series. Supracaudal luminous scales 3, infracaudal 7.

D. 16; A. 17, begin below hind basal edge of dorsal; pectoral $3 \frac{1}{6}$ in combined head and body to caudal base; ventral $1 \frac{1}{2}$ in head.

Length without caudal 55 mm. (Parr.)

Western Atlantic.

Lampanyctus hectoris (Günther)

Scopelus hectoris GÜNTHER, Ann. Mag. Nat. Hist., ser. 4, vol. 17,
1876, p. 399. Cook's Strait, New Zealand.

Lampanyctus hectoris NORMAN, Discovery Rep., vol. 2, 1930, p. 328
(S. 33°20' to 33°11' E. 17°17' to 17°26', 200 meters; type;
paratypes of Scopelus argenteus).

Scopelus argenteus GILCHRIST, Marine Investig. South Africa, vol. 3,
1904, p. 15, pl. 36. Constable Hill (nearing Saldanha Bay)
bearing E. 3/4 S., distant 19 1/2 miles, Green Point bearing
S. E. by E. 1/2 E., distant 36 miles; South Head bearing E. by
S. 1/2 S., distant 25 miles. --THOMPSON, Marine Biolog. Rep.
South Africa, No. 3, 1916, p.

Myctophum (Lampanyctus) argenteus BARNARD, Ann. South African Mus.,
vol. 21, pt. 1, 1925, p. 238 (off Saldanha Bay, Table Bay and
Cape Point, to 315 fathoms; type).

Lampanyctus argenteus PARR, Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, Dec. 1928, p. 83 (compiled).

Depth $4 \frac{3}{5}$; head $3 \frac{1}{2}$, width 2. Snout 6 in head; eye 4, greater than snout; maxillary reaches well beyond eye though not quite to well inclined hind preopercle edge; interorbital about 3, low.

Scales 38 (figure shows 50 in lateral line, not enlarged; 2 above, 3 below).

One antorbital luminous organ, somewhat indistinct, on front margin of eye little below nostril; 2 opercular photophores, upper in line with lower eye edge and suprapectoral, lower (not shown on figure) behind mouth in line with branchiostegal; 3 equidistant branchiostegals; 5 pectorals, first interspace longest, third photophore little elevated, likewise fifth which about level with lower subpectoral; 1 suprapectoral close above pectoral fin origin; 2 subpectorals, first or lower well above though midway in space between first and second ventrals, upper close before median pectoral fin ray bases; 5 ventrals, progressively higher from first to third which level with upper subpectoral; 1 supraventral little before and about midway between lateral line and ventral fin origin; 8 + 5 anals, all at same level, only last 2 posteroanals behind anal fin base; 3 supraanals in oblique line with last ventral so uppermost about upper $\frac{2}{5}$ of space below lateral line; 1 posterolateral little above last anteroanal though midway in space below lateral line opposite adipose fin origin; 5 precaudals, last 2 progressively higher with last still well below end of lateral line. Patch of luminous scales supracaudal and infracaudal. Snout covered by soft glandular tissue, probably luminous in function.

D. II, 11, first branched ray $1 \frac{4}{5}$ in head; adipose fin $3 \frac{1}{3}$;
 A. II, 14, first branched ray $2 \frac{1}{4}$; caudal $1 \frac{1}{5}$, well forked; pectoral
 $2 \frac{1}{4}$; ventral $1 \frac{3}{4}$.

Dark brown along dorsal region of body, reaching half way to lateral line and less marked brown tinge along ventral region. In middle of body coloring matter nearly absent and scales with bright silvery appearances. Length not given, figure 73 mm. (Gilbert.)

Antarctic and Pacific Oceans. As mentioned by Gilchrist this species appears to be unique in the presence of 5 precaudal photophores.

Lampanyctus tenuiformis (Brauer)

Myctophum (Lampanyctus) tenuiforme BRAUER, Deutsch. Tiefsee Exp.

Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 243, text fig. 160

(trunk). S. Lat. $4^{\circ}34'8''$ E. Long. $53^{\circ}42'8''$, between Seychelles

and Zanzibar. --PAPPENHEIM, Deutsch. Südpolar Exp., vol. 15,

Zool. pt. 7, 1914, p. 197 (N. $0^{\circ}46'$ W. $18^{\circ}59'$, 3000 meters, south east of Cape Verde Islands).

Lampanyctus tenuiforme PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, 1928, p. 83 (compiled).

Depth 5; head 3. Eye 6 in head; maxillary extends well beyond eye. Scales 37 or 38 in lateral line, cycloid.

Small antorbital photophore; ventrals 4, level, equidistant; 1 supraventral, midway between lateral line and ventral fin origin; anals 5 + 9, level, posteroanals behind anal fin base; 3 supraanals, in broad angular series, first over third ventral, second little behind fourth ventral and higher than first spot though both lower than supraventral, third close behind and close below lateral line, forms inclined series with second supraanal and fourth ventral spots; 2 posterolaterals, in little inclined line passing little behind last anteroanal though first little nearer latter than second close below lateral line; 2 precaudals, first separated from last posteroanal and second close below end of lateral line. Supracaudal luminous scales 4, infracaudal 4.

D. III, 9, inserted little behind ventral origin; A. III, 15, inserted below last fourth of dorsal fin base; pectoral nearly reaches anal origin.

Length 21 mm.

(Brauer.)

Indian Ocean.

Lampanyctus nobilis Taaning

Lampanyctus nobilis TAANING, Vidensk. Medd. Dansk Naturh. Foren.

"Kobenhavn, vol. 86, 1928, p. 66. North Atlantic; diagnosis in

key. --PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3,

1928, p. 84 (compiled); vol. 2, art. 4, Oct. 1931, p. 29, fig. 11.

(note).

Depth $5 \frac{4}{5}$; head $3 \frac{1}{5}$. Snout $5 \frac{4}{5}$ in head from snout tip; eye $5 \frac{4}{5}$, equals snout; maxillary extends $1 \frac{1}{2}$ eye diameters behind eye, slender, length $1 \frac{3}{5}$ in head from snout tip; interorbital low.

Small photophore on shoulder at beginning of lateral line; 5 pectorals, first interval longest, fourth spot elevated level with upper subpectoral over and little behind third; 1 suprapectoral close below lateral line before subpectorals; 2 subpectorals, in line with suprapectoral, lower close below upper which before bases of upper pectoral rays; 4 ventrals, last interval longest, second spot slightly elevated; 1 supraventral, about upper $2/5$ between lateral line and ventral/fin base; anals 6 + 8, first anteroanal only very slightly lower than rest, first posteroanal at last anal ray bases, others behind anal fin base; 3 supraanals, in angulate series, first above last ventral interspace, second and third spots in inclined line with last ventral spot with second little higher than first and third close below lateral line; 2 posterolaterals, in inclined line passing little behind last anteroanal, upper close below lateral line; 4 precaudals, separated from posteroanals, second to fourth in oblique line with last close below end of lateral line. Supracaudal luminous scales 4, infracaudal 8.

D. 15; A. 19, I, inserted below last dorsal ray bases; least depth of caudal peduncle $3 \frac{5}{6}$ in total head; pectoral $3 \frac{1}{2}$ in combined head and body without caudal.

Length without caudal 33.5. (Parr.)

North Atlantic.

Lampanyctus festivus Taaning

Lampanyctus festivus TAANING, Vidensk. Medd. Dansk Naturh. Foren.

Köbenhavn, vol. 86, 1928, p. 67. North Atlantic; diagnosis in key. --PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. 84 (compiled). --NORMAN, Discovery Rep., vol. 2, 1930, p. 330 (S. $33^{\circ}25'$ E. $6^{\circ}31'$, 1000 meters; S. $35^{\circ}01'$ E. $10^{\circ}18'$, 250 meters; S. $2^{\circ}43'30''$ W. $00^{\circ}56'30''$, 125 to 175 meters; S. $00^{\circ}56'$ W. $14^{\circ}08'30''$, 250 meters).

No photophore on cheek; anals 6 to 8 + 7 to 9, no distinct interval between last posteroanal and precaudals; first supraanal most frequently above or little anterior to third ventral, sometimes displaced more anteriorly to nearly above second ventral spot; first supraanal not in line parallel to that passing through third supraanal, supraventral and fourth pectoral; precaudals 2 + 2, last and penultimate spots in vertical or nearly vertical line, ultimate spot sometimes trifle posterior or abnormally anterior to vertical but last 3 spots never in straight line. No luminous scale on adipose fin.

D. 12 to 14; A. 18 to 20.

(Taaning.)

North Atlantic.

Lampanyctus nigrescens (Brauer)

Myctophum (Lampanyctus) nigrescens BRAUER, Zool. Anzeiger,

vol. 28, Nr. 10, Dec. 20, 1904, p. 403; Deutsch Tiefsee

Exp. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 241, text

fig. 158 (S. $2^{\circ}38'9''$ E. $63^{\circ}37'9''$, east of Seychelles, 800

to 1000 meters; S. $3^{\circ}24'6''$ E. $58^{\circ}38'1''$). Indian Ocean.

Lampanyctus nigrescens PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, Dec. 1928, p. 84 (reference).

Depth 5; head $3 \frac{1}{6}$. Snout $5 \frac{1}{3}$ in head; eye $8 \frac{1}{2}$, $1 \frac{3}{4}$ in snout; maxillary extends 3 eye diameters behind eye, slender, length $1 \frac{2}{5}$ in head; interorbital low.

Small antorbital photophore at lower front eye edge; 2 operculars, upper larger, little above hind upper edge of maxillary; 3 branchiostegals; 5 pectorals, first interspace greatest, fourth spot over and little posterior to third and little above level of upper opercular, interval to third or fifth subequal with first interval; 1 suprapectoral, about first third between lateral line and pectoral fin origin; 2 subpectorals, upper close over lower and below bases of lowest pectoral rays, over first pectoral rays, over first pectoral interval little nearer second pectoral spot than first; 5 ventrals, second above and little posterior to first or not quite level with upper subpectoral; 1 supraventral, close below lateral line over ventral origin; anals 5 + 5 or 6, level, posteroanals all behind anal fin base; 3 supraanals, first and second at same level or little above second ventral, first over interval between third and fourth ventral, second behind vent and third or uppermost close below lateral line little before or over first anteroanal; 2 posterolaterals, in inclined line from behind last anteroanal and uppermost close below lateral line; 3 precaudals, in curve from lowest progressively to last close below end of lateral line. Supracaudal luminous scales 3, infracaudal 5.

D. IV, 11, first branched ray 2 in head; adipose fin 4; A. III, 15, first branched ray $2 \frac{1}{8}$; caudal $1 \frac{1}{4}$, deeply emarginate; least depth of caudal peduncle $3 \frac{1}{8}$; pectoral $2 \frac{4}{5}$; ventral $2 \frac{7}{8}$.

Length 28 mm.

(Brauer.)

Indian Ocean. According to Brauer known by its posteriorly inserted dorsal, show inserted midway between eye center and caudal base and anal origin opposite first fourth of dorsal base.

Lampanyctus mexicanus (Gilbert)

Myctophum mexicanum GILBERT, Proc. U. S. Nat. Mus., vol. 13,

1890 (1891), p. 51. Albatross Stations 3008 and 3009, off

Lower California, 306 to 857 fathoms.

Mannobrachium mexicanum GOODE and BEAN, Oceanic Ichth., 1895,

p. 512 (reference). --JORDAN and EVERMANN, Bull. U. S. Nat.

Mus., No. 47, pt. 1, 1896, p. 563 (compiled).

Myctophum (Lampanyctus) mexicanum BRAUER, Zool. Anzeiger, vol. 28,

Nr. 10, Dec. 20, 1904, p. 396 (diagnosis in key); Deutsch

Tiefsee Exp. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 167,

(diagnosis in key).

← Lampanyctus mexicanus PARR, Bull. Bingham Oceanogr.

← Collection, vol. 3, art. 3, 1928, p. 84 (diagnosis in

key); Proc. U. S. Nat. Mus., vol. 78, 1929, p. 15,

fig. 6 (type); Bull. Bingham Oceanogr. Collection, vol. 2,

art. 4, Oct. 1931, p. 30, fig. 12 (N. $22^{\circ}50'20''$

W. $109^{\circ}48'15''$, 525 fathoms; N. $24^{\circ}7'$ W. $108^{\circ}40'$, 286

fathoms; types of Lampanyctus oculeus and Lampanyctus

mexicanus).

Myctophum oculeus GARMAN, Mem. Mus. Comp. Zool., vol. 24, 1899,

p. 260, pl. 56, fig. 2. N. 4° to 32° W. 78° to 135° , 0 to 1772

fathoms; S. $0^{\circ}57'30''$ W. $89^{\circ}3'30''$, 421 fathoms.

Myctophum (Lampanyctus) oculeum BRAUER, Deutsch. Tiefsee Exp.

Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 167 (part;

diagnosis in key).

Lampanyctus oculeus PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, 1928, p. 85 (note).

Depth $5 \frac{1}{3}$; head $3 \frac{1}{4}$, width $2 \frac{1}{4}$. Snout 9 in head from snout tip; eye $4 \frac{4}{5}$, greater than snout or interorbital; maxillary extends $1 \frac{1}{5}$ eye diameters behind hind eye edge though not quite to well inclined hind preopercle edge, slender, length $1 \frac{1}{3}$ in head from snout tip; interorbital $5 \frac{1}{2}$, level. Gill rakers $4 + 14$, lanceolate, slender, $1 \frac{1}{4}$ in eye; gill filaments $\frac{1}{2}$ gill rakers.

Scales 33 in lateral line to caudal base, enlarged; 3 above, 3 below, 14 predorsal forward to occiput. Scales very caducous, all fallen.

Small antorbital photophore close before front eye edge medially; 1 humeral, small, over lower opercular; upper opercular larger than lower, on line from lower eye edge to lower subpectoral, lower close behind and below hind maxillary end; 3 equidistant branchiostegals; 5 pectorals, first interspace greatest, fourth spot elevated level with upper subpectoral over and little behind third ventral; 1 suprapectoral, on lateral line little behind first pectoral or close before lower subpectoral; 2 subopercles, first or lower little nearer upper than first ventral though well advanced from upper, close below hind angle of opercle which before pectoral fin base; 4 ventrals, second but slightly lower than supraventral and midway between interspace of first and third; 1 supraventral, low, at lower third between lateral line and ventral fin base; 5 + 5 anals, anteroanals with first little lower than others, posteroanals all evidently behind anal fin base and continuous with precaudals; 3 supraanals, first above interspace between third and fourth ventrals, second slightly higher or level with fourth pectoral and uppermost close below above or on lateral line slightly behind second or median and opposite first anteroanal; 2 posterolaterals, first or lower behind and little above last anteroanal and uppermost close above lateral line close before adipose fin; 4 precaudals, upper close above end of lateral line. Supracaudal luminous scales 3, infracaudal 6 or 7, not elevated on rudimentary caudal rays.

D. III, 10, I, first branched ray $1 \frac{3}{5}$? in total head length; adipose fin 6; A. III, 13, I, first branched ray $1 \frac{3}{4}$?; caudal $1 \frac{1}{5}$?, forked; least depth of caudal peduncle $3 \frac{2}{3}$; pectoral ?; ventral 2.

Brownish, scale pockets darker. Iris gray. Fins pale to whitish, caudal base dark.

76343 U. S. N. M. Albatross Station (3008). Length 52 mm. Type of Myctophum mexicanum.

Lampanyctus microchir Gilbert

Lampanyctus microchir GILBERT, Mem. Carnegie Mus., vol. 6, No. 2,

Aug. 1913, p. 101. Suruga Bay, in 300 fathoms. --PARR, Bull.

Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928,

p. 85 (reference).

Depth $6 \frac{1}{5}$; head 3, width $2 \frac{2}{3}$. Snout 6 in head from snout tip; eye 5, greater than snout, $1 \frac{1}{4}$ in interorbital; maxillary extends 2 eye diameters behind eye though not quite to well inclined hind preopercle edge, expansion 2 in eye, length $1 \frac{1}{4}$ in head from snout tip; interorbital $3 \frac{1}{2}$, little convex.

Scales 34 in lateral line.

Small antorbital photophore below level of hind nostril; small humeral photophore?; 2 operculars, upper about level with lower eye edge and pectoral fin origin; branchiostegals?; 5 pectorals, fourth elevated above third on level of lower pectoral ray, first interspace longest; 1 suprapectoral on lateral line; 2 suprapectoral on lateral line; 2 subpectorals, lower below upper, which before middle of pectoral base; 5 ventrals, second elevated above and in advance of first, first, third, fourth and fifth equidistant and equidistant from median ventral line; 1 supraventral on lateral line somewhat before ventral fin base; 6 + 6 anals, fifth anteroanal elevated and others on same level, first interspace longer than following ones, posteroanals behind anal fin base; 3 supraanals, first and second equally elevated, second over or slightly before fourth ventral, third on lateral line below middle of dorsal fin; 3 precaudals, first above first caudal ray, lower than last posteroanal, second elevated little behind oblique line joining first and third, distance from first little over half space from third, which above and little behind, in contact with lateral line. Supracaudal luminous scales 3, infracaudals 4. No accessory photophores.

D. 14, fin height $1 \frac{2}{3}$ in head; A. 17, fin height $2 \frac{1}{2}$; caudal damaged, forked; least depth of caudal peduncle $4 \frac{1}{4}$; pectoral ?; ventral $2 \frac{1}{2}$?

Dusky to blackish generally. Fins paler to light brown.

74468 U. S. N. M. Suruga Bay, Japan. Albatross Collection (5064).

Length 20 mm. Type.

Lampanyctus micropterus (Brauer)

Myctophum(Lampanyctus) micropterus BRAUER, Deutsch. Tiefsee Exp.

Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 239, text fig. 157.

N. $0^{\circ}26'3''$ W. $6^{\circ}32'$, Gulf of Guinea; N. $1^{\circ}51'$ E. $0^{\circ}31'2''$;

N. $2^{\circ}36'5''$ E. $3^{\circ}27'5''$; N. $3^{\circ}10'$ E. $5^{\circ}28'5''$; S. $1^{\circ}56'7''$

E. $7^{\circ}40'6''$; S. $0^{\circ}58'2''$ E. $99^{\circ}43'2''$, off west Sumatra;

S. $4^{\circ}5'8''$ E. $73^{\circ}24'8''$, north of Chagos; S. $6^{\circ}19'3''$ E. $73^{\circ}18'9''$;

S. $2^{\circ}43'8''$ E. $61^{\circ}12'6''$, Seychelles; S. $3^{\circ}24'6''$ E. $58^{\circ}38'1''$;

S. $2^{\circ}56'6''$ E. $67^{\circ}59'$, 600 to 800 meters, west of Chagos. --

MURRAY and HJORT, The Depths of the Ocean, 1912, p. 613

(N. $31^{\circ}20'$ W. $35^{\circ}7'$, 3886 meters, Gran Canaria to Fayal;

N. $31^{\circ}24'$ W. $34^{\circ}47'$). --PAPPENHEIM, Deutsch. Südpolar Exp.,

vol. 15, Zool. pt. 7, 1914, p. 197 (N. $20^{\circ}41'$ W. $31^{\circ}53'$, 3000

meters).

Lampanyctus micropterus WEBER and BEAUFORT, Fishes Indo Austral.

Archipelago, vol. 2, 1913, p. 154 (compiled). --PARR, Bull.

Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 85

(note). --NORMAN, Discovery Rep., vol. 2, 1930, p. 331

(S. $2^{\circ}49'30''$ W. $9^{\circ}25'30''$, 124 meters).

Myctophum (Lampanyctus) oculeum (not GARMAN) BRAUER, Zool. Anzeiger,

vol. 28, Nr. 10, 1904, p. 396 (Valdivia collections). --

PAPPENHEIM, Deutsch. Südpolar Exp., vol. 15, Zool. pt. 7, 1914,

p. 196 (S. $14^{\circ}3'$ W. $19^{\circ}10'$, 1900 meters; S. $24^{\circ}55'$ W. $1^{\circ}18'$,

1500 meters; S. $11^{\circ}19'$ W. $18^{\circ}34'$, 1200 meters).

Depth $5 \frac{2}{3}$ to $5 \frac{3}{4}$; head 3 to $3 \frac{1}{2}$, width $2 \frac{2}{5}$ to $2 \frac{2}{3}$.

Snout 5 to $5 \frac{1}{4}$ in head from snout tip; eye $4 \frac{1}{5}$ to 5, greater than snout or interorbital; maxillary reaches little over eye diameter behind eye though not quite to hind preopercle edge, slender, length $1 \frac{1}{3}$ to $1 \frac{1}{2}$ in head; interorbital $4 \frac{2}{5}$ to $4 \frac{1}{2}$, low. Gill rakers 4 + 7, lanceolate, equals eye, subequal with gill filaments.

Scales 35 in lateral line, especially enlarged on caudal peduncle.

Scales very caducous, most all fallen.

Small antorbital luminous organ close along lower front eye edge; 2 opercular photophores, upper little larger and about on line with lower eye edge and upper subopercle; 3 equidistant veiled branchiostegals; 5 pectorals, fourth well elevated above pectoral fin base though opposite middle of space between third and fifth and interspace between first and second greatest; 1 supraventral, close below lateral line and well before 2 subpectorals, of which upper before and opposite middle of pectoral base and lower midway between upper and well before second pectoral; 5 ventrals, second elevated though not quite high as fourth pectoral or first supraanal and little before first ventral; 1 supra-ventral on or close above lateral line opposite ventral fin origin; 5 + 6 anals, posteroanals behind anal fin base; 3 supraanals, first over or little behind fourth ventral, second little lower to level and opposite anal fin origin, third on or close above lateral line little before first anteroanal; 2 posteroanals, lower little before upper and in inclined line with upper on lateral line and last anteroanal; 3 precaudals in inclined line, lowest near tail edge at lower rudimentary caudal rays and uppermost at end of lateral line. Precaudal supracaudal luminous plates 3, infracaudals 5.

D. III, 12; first branched ray $1 \frac{3}{4}$ in total head length; adipose fin 4; A. III, 12, first branched ray $1 \frac{2}{3}$ to 2; caudal $1 \frac{1}{3}$? to $1 \frac{2}{5}$, deeply forked; least depth of caudal peduncle $3 \frac{1}{3}$; pectoral ?; ventral 2.

Brown, scale pockets darker. Iris slate gray. Opercle and belly blackish. Fins whitish.

Atlantic, Indian and Antarctic Oceans.

D. 5604. Bilatu (town), N. 26° W. 8.7 miles (N. 0°22'30" E. 122°42'30"), Gulf of Tomini, Celebes. November 16, 1909. Length 31 mm. 2 examples.

Lampanyctus nannochir (Gilbert)

Myctophum nannochir GILBERT, Proc. U. S. Nat. Mus., vol. 13, 1890,

p. 51. Pacific Coast of United States, 266 to 685 fathoms.

Nannobrachium nannochir GILBERT, Rep. U. S. Fish Comm., pt. 19,

1893 (1895), p. 400 (type; North Pacific; Bering Sea). --JORDAN

and EVERMANN, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p. 562

(part).

Lampanyctus nannochir GILBERT, Mem. Carnegie Mus., vol. 6, No. 2,

Aug. 1913, p. 100 (southern Okhotsk Sea; south east of Cape

Patience, Sagalin). --PARR, Bull. Bingham Oceanogr. Collection,

vol. 3, art. 3, Dec. 1928, p. 86 (note); Proc. U. S. Nat. Mus.,

vol. 76, 1929, p. 18, fig. 8 (type).

Depth 5 to $5 \frac{1}{5}$; head $3 \frac{1}{3}$ to $3 \frac{2}{5}$, width $2 \frac{3}{5}$ to $2 \frac{2}{3}$. Snout $5 \frac{3}{4}$ to 6 in head from snout tip; eye 4 to $4 \frac{2}{5}$, greater than snout, 1 to $1 \frac{1}{8}$ in interorbital; maxillary extends little over eye diameter behind hind eye edge though not quite to well inclined hind preopercle edge, slender, length $1 \frac{1}{4}$ to $1 \frac{2}{5}$ in head from snout tip; interorbital 4 to $4 \frac{1}{8}$, low, depressed. Gill rakers 6 + 14, lanceolate, slender, equal eye, $1 \frac{2}{3}$ in gill filaments.

Scales 37 in lateral line to caudal base, enlarged; 4 above, 4 below, 14 predorsal. Scales all very caducous, all fallen.

Single small antorbital photophore, nearly median on front eye edge; 2 operculars, upper larger and in line with lower eye edge and upper subpectoral, lower veiled, little below and behind hind maxillary end; 3 veiled equidistant branchiostegals; 5 pectorals, first interspace greatest, fourth spot above and slightly posterior to third and nearly level with upper subpectoral; 1 suprapectoral little nearer lateral line than pectoral fin origin, close before subpectorals in vertical; 2 subpectorals, one above other, close, upper opposite or before bases of median pectoral fin rays; 4 ventrals, at same level, at gradually decreasing intervals, first interspace longest; 1 supraventral, nearly midway between lateral line and ventral fin origin; 7 + 7 anals, posteroanals behind anal fin base; 3 supraanals, in very slightly curved to nearly straight series, first or lowest close behind and little higher than last ventral; second slightly nearer to lower than to upper supraventral which well below lateral line or at upper $2/5$ of space; 1 posterolateral behind last anteroanal and below lateral line same space as upper supraventral; 3 precaudals, well separated from posteroanals in nearly straight inclined row to upper, which little below end of lateral line. Supracaudal luminous scales 4, infracaudal 10.

D. III, 9, I, first branched ray $1 \frac{3}{4}$? in total head length; adipose fin 4; A. III, 12, I, first branched ray 2 to $2 \frac{1}{8}$; caudal subequal with head, forked; least depth of caudal peduncle 3 to $3 \frac{2}{3}$; pectoral ?; ventral $2 \frac{1}{3}$ to 2?

Brown, scale pockets often dusky. Opercle and inside pharynx dusky to blackish. Iris dark gray. Fins brownish.

Pacific Ocean. In combination with both supracaudal and infra-caudal luminous bodies and in the photophores of the supraanal, supraventral, suprapectoral and supracaudal distinctly below the lateral line this species differs from all the others of its genus.

D. 4392

Length 23 mm.

D. 4758

Length 36 mm.

D. 4759. N. $53^{\circ}5'$ W. $138^{\circ}31'$, off Queen Charlotte Islands. In 2000 fathoms. May 20, 1906. Length 25 to 34 mm. 13 examples.

D. 4760

Length 21 to 48

mm. 5 examples.

D. 4763.

Length 41 mm.

D. 4767.

Length 44 mm.

very poorly preserved.

D. 4774.

Length 58 to 71 mm.

3 examples.

D. 4775.

Length 38 mm.

44291 U. S. N. M. Albatross Collection. Length 66 to 125 mm. Types of Myctophum nannochir.

54196 U. S. N. M. Albatross Collection (3308). Length 72 to 100 mm.

2 examples.

54221 U. S. N. M. Albatross Collection (3342). Length 125 mm.

59407 U. S. N. M. Albatross Collection (3308). Length 80 to 92 mm.

2 examples.

76495 U. S. N. M. Albatross Collection (3603). Length 65 to 80 mm.

2 examples.

60174 U. S. N. M. Albatross Collection (4257). Length 33 to 60 mm.

4 examples.

60185 U. S. N. M. Albatross Collection (4267). Length 95 to 115 mm.

2 examples.

60175 U. S. N. M. Albatross Collection (4235). Length 34 to 55 mm.

2 examples.

Lampanyctus leucopsarus (Eigenmann and Eigenmann)

Myctophum (Stenobrachius) leucopsarus EIGENMANN and EIGENMANN,

Proc. California Acad. Sci., ser. 2, vol. 3, 1890, p. 5.

Off Point Loma, California; from Sebastodes mouth.

Nannobrachium leucopsarus GILBERT, Rep. U. S. Fish Comm., pt. 19,

1893 (1895), p. 399 (Bering Sea north of Unalaska, 225 to 1625

fathoms; off Washington and California, 516 to 455 fathoms). --

JORDAN and EVERMANN, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896,

p. 562 (compiled). --TOWNSEND and NICHOLS, Bull. Amer. Mus. Nat.

Hist. New York, vol. 52, art. 1, May 16, 1925, p. 10 (south

west of Santa Barbara Islands, 451 fathoms; Station 5694, 640

fathoms; Lat. 33° to 36° , 485 fathoms).

Myctophum leucopsarus GOODE and BEAN, Oceanic Ichth., 1895, p. 512

(reference; said "to belong to Nannobrachium").

Myctophum (Lampanyctus) leucopsarum BRAUER, Zool. Anzeiger,
vol. 28, Nr. 10, 1904, p. 396 (diagnosis in key); Deutsch.
Tiefsee Exp. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 238,
fig. 156 (example in Berlin Museum).

Lampanyctus leucopsarum GILBERT, Proc. U. S. Nat. Mus., vol. 48,
1915, p. 315 (off San Diego, Catalina Island, San Miguel
Island, Monterey Bay, California; 32 to 1083 fathoms).

Lampanyctus leucopsarus PARR, Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, 1928, p. 86 (note); Proc. U. S. Nat. Mus.,
vol. 76, 1929, p. 18 (type).

Myctophum nannochir GILBERT, (part) Proc. U. S. Nat. Mus., vol. 13,
1890, p. 51. (Pacific Coast United States, 266 to 685 fathoms).

Nannobrachium nannochir GILBERT, Rep. U. S. Fish Comm., pt. 19,
1893 (1895), p. 400 (north Pacific and Bering Sea).

Depth $4 \frac{1}{5}$ to $4 \frac{1}{2}$; head $3 \frac{1}{6}$ to $3 \frac{3}{5}$, width $2 \frac{2}{5}$ to $2 \frac{3}{4}$. Snout $5 \frac{3}{5}$ to 10 in head; eye $3 \frac{3}{5}$ to 4, greater than snout, greater than interorbital in young to subequal with age; maxillary extends little less than eye diameter behind eye though not quite to inclined hind maxillary edge, slender, length $1 \frac{2}{5}$ to $1 \frac{1}{2}$ in head; interorbital 3 to $3 \frac{1}{2}$, level. Gill rakers 5 + 12, lanceolate, slender, $1 \frac{1}{8}$ in eye; gill filaments $\frac{3}{5}$ gill rakers.

Scales 36 in lateral line, enlarged; 3 above. Caudal base scaly. Scales usually very caducous, all fallen in most specimens.

Small antiorbital photophore nearly median on front eye edge; 2 operculars, upper little larger on level with lower eye edge and line passing between subpectorals, lower close behind and below hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, of lower 4 photophores first and third interspaces subequally longer than second or median, fourth spot elevated level with pectoral fin origin over and little behind third pectoral; 1 suprapectoral, about upper $\frac{2}{5}$ between lateral line and pectoral fin origin, over subpectorals; 2 subpectorals, first or lower close below upper, well before second pectoral, upper opposite lower median pectoral fin ray bases; 4 ventrals, level, first interspace little longer than others; 1 supraventral, midway between lateral line and first ventral; 6 + 7 anals, anteroanals slightly arched, posteroanals behind anal fin base; 3 supraanals, in oblique line from last ventral photophore, first or lowest little closer last ventral photophore than median which also little closer to first than third or uppermost which rather close below lateral line little before first anteroanal; 1 posterolateral, above and little posterior to sixth anteroanal; 4 precaudals arched on lower caudal lobe base with first at lower rudimentary caudal rays then other gradually higher with fourth rather well below lateral line. Supracaudal luminous scales 6 or 7, infracaudals 7 to 9.

D. III, 10, I, or III, 11, I, first branched ray $1 \frac{2}{5}$ in head; adipose fin 4; A. III, 11, I to III, 13, I, first branched ray $1 \frac{4}{5}$ to $2 \frac{1}{10}$; caudal $1 \frac{1}{10}$, well forked; least depth of caudal peduncle $2 \frac{1}{4}$ to 3, well forked; pectoral $2 \frac{7}{8}$; ventral $2 \frac{1}{4}$.

Brown, scale pockets all darker. Opercles and inside gill opening blackish. Iris gray. Fins pale, often whitish.

Pacific Ocean.

41915 U. S. N. M. Off Point Loma, San Diego, California. C. H. Eigenmann.

No. 155. Length 52 to 90 mm. 7 examples, all very poorly preserved.

41916 U. S. N. M. Off Point Loma. C. H. Eigenmann. Length 80 to 95 mm.

Types of Myctophum (Stenobrachius) leucopsarum. 7 examples. Poorly preserved.

46626 U. S. N. M. Albatross Collection (3073). Length 90 mm.

46661 U.S. N. M. N. $34^{\circ}11'30''$ W. $120^{\circ}3'$. In 322 fathoms. Albatross Collection (2903). Length 63 mm.

46664 U. S. N. M. N. $33^{\circ}49'$ W. $119^{\circ}24'30''$. In 877 fathoms. Albatross Collection (2980). Length 85 mm.

46665 U. S. N. M. Albatross Collection (3074). Length 105 mm.

46666 U. S. N. M. N. $47^{\circ}22'$ W. $125^{\circ}41'$. In 859 fathoms. Albatross Collection (3075). Length 110 mm.

46733 U. S. N. M. Albatross Collection (2893). Length 79 mm.

48682 U. S. N. M. Albatross Collection (3325). Length 91 mm.

53952 U. S. N. M. Albatross Collection (2890). Length 35 mm.
53953 U. S. N. M. Albatross Collection (2859). Length 104 mm.
53954 U. S. N. M. Albatross Collection (3479). Length 80 mm.
54189 U. S. N. M. Albatross Collection (3343). Length 63 to 116 mm.

4 examples.

54530 U. S. N. M. Albatross Collection (2925). Length 100 mm.
60177 U. S. N. M. Albatross Collection. Length 90 mm.
60184 U. S. N. M. Albatross Collection (4255). Length 82 to 113 mm.

6 examples.

61529 U. S. N. M. Albatross Collection (3325). Length 95 mm.
64328 U. S. N. M. Albatross Collection (4538). May 31, 1904.

Length 46 mm. Host of Lernaeenicus medusaeus Wilson.

76493 U. S. N. M. Albatross Collection (3601). Length 78 to 96 mm.

2 examples.

76494 U. S. N. M. Albatross Collection (3604). Length 100 mm.
76496 U. S. N. M. Albatross Collection (3604). Length 73 mm.
77497 U. S. N. M. Albatross Collection (4412). Length 54 mm.
87560 U. S. N. M. Albatross Collection. Length 92 mm.

Lampanyctus macdonaldi (Goode and Bean)

Nannobrachium macdonaldi GOODE and BEAN, Oceanic Ichth., 1895,

p. 94, pl. 29, fig. 110. N. $39^{\circ}48'$ W. $70^{\circ}36'$, 551 fathoms;

N. 28° to 40° W. 66° to 87° , 515 to 1467 fathoms. --JORDAN and

EVERMANN, Bull. U. S. Nat. Mus., No. 47, pt. 1, 1896, p. 563

(compiled). --FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1911

(1912), p. 569 (N. $39^{\circ}44'30''$ W. $71^{\circ}04'$, 1022 fathoms).

Lampanyctus macdonaldi PARR, Proc. U. S. Nat. Mus., vol. 76, 1929,

p. 20, fig. 9 (type).

Depth $4 \frac{4}{5}$ to 5; head $3 \frac{1}{4}$ to $3 \frac{2}{5}$, width $2 \frac{1}{4}$ to $2 \frac{2}{3}$.

Snout $5 \frac{1}{2}$ to 6 in head from snout tip; eye $4 \frac{1}{4}$ to $4 \frac{2}{3}$, greater than snout, 1 to $1 \frac{1}{8}$ in interorbital; maxillary extends $1 \frac{2}{3}$ to $1 \frac{3}{4}$ eye diameters behind hind eye edge but not quite to well inclined hind preopercle edge, slender, length $1 \frac{1}{3}$ in head from snout tip; interorbital $3 \frac{2}{3}$ to $4 \frac{1}{8}$, low. Gill rakers 7 + 18, lanceolate, slender, $1 \frac{1}{8}$ in eye, twice gill filaments.

Scales 36 or 37 in lateral line to caudal base, enlarged; 3 above, 4 below, 16 predorsal forward to head. Scales very caducous, all lost.

Antorbital photophores 2, at frontorbital edge, small and well separated; cheek with photophores nearly level with lower eye edge and not quite eye diameter behind eye, also another little lower and less distant than eye; 2 operculars, upper larger and on line passing from lower eye edge between subpectorals, lower close below and behind hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace longest, fourth spot elevated level with upper subpectoral and over or little posterior to third to which nearer than to fifth; 1 suprapectoral, midway between lateral line and pectoral fin origin before subpectorals and little behind first pectoral; 2 subpectorals, one above other or lower little posterior below pectoral fin, upper close below pectoral fin origin; 4 ventrals, equidistant, on same level; 1 supraventral, midway or little above middle in space between lateral line and ventral fin base; 6 or 7 + 7 anals, anteroanals equidistant and slightly arched upward, posteroanals behind anal fin base and contiguous with precaudals; 3 supraanals, first lowest or above second ventral interspace or over third ventral photophore, second slightly higher, well behind last ventral and high as pectoral fin origin, third rather close below lateral line over and slightly posterior to second supralateral or first anteroanal; 2 posterolaterals, lower slightly above median supraanal behind last anteroanal and upper rather close below lateral line opposite adipose fin; 4 precaudals, arched slightly along lower lobe of caudal fin base and fourth close below end of lateral line above or slightly anterior to third. Supracaudal luminous plates 3, infracaudal 8. Sometimes luminous scale at front of adipose fin.

D. III, 10, I to IV, 11, I, first branched ray $1 \frac{1}{4}$ to $1 \frac{4}{5}$ in head; adipose fin $2 \frac{2}{5}$ to $2 \frac{3}{5}$; A. III, 12, I or III, 13, I, second branched ray $1 \frac{2}{3}$ to $1 \frac{4}{5}$; caudal $1 \frac{1}{4}$ to $1 \frac{1}{2}$, forked; least depth of caudal peduncle $2 \frac{3}{5}$ to 3; pectoral $2 \frac{1}{5}$? to $2 \frac{2}{5}$; ventral $1 \frac{4}{5}$ to $2 \frac{1}{4}$?

Brown, scale pockets darker. Inside gill opening blackish. Iris dark gray. Fins brownish, whitish in small examples.

Atlantic Ocean.

28837 U. S. N. M. N. 39° W. 70° . Bureau of Fisheries (954).

Length 157 mm.

28840 U. S. N. M. N. 39° W. 70° . Bureau of Fisheries (953).

Length 70 mm.

33526 U. S. N. M. N. 39° W. 71° . Bureau of Fisheries (2094).

Length 83 to 128 mm. 5 examples.

35411 U. S. N. M. N. 39° W. 71° . Albatross Collection (2181).

Length 105 mm.

35445 U. S. N. M. N. 39° W. 71° . Bureau of Fisheries.

Length 155 mm. Type of Nannobrachium macdonaldi.

35539 U. S. N. M. N. 39° W. 71° . Bureau of Fisheries (2202).

Length 85 to 120 mm. 2 examples.

35557 U. S. N. M. N. 39° W. 71° . Albatross Collection (2204).

Length 115 mm.

35616 U. S. N. M. N. $39^{\circ}39'45''$ W. $71^{\circ}35'15''$. Albatross Collection.

Length 81 mm.

38187 U. S. N. M. N. 39° W. 73° . Albatross Collection.

Length 100 mm.

39478 U. S. N. M. N. 39° W. 70° . Albatross Collection (2553).

Length 119 mm. Paratype of Nannobrachium macdonaldi.

39481 U. S. N. M. N. $39^{\circ}51'$ N. $70^{\circ}17'$. Albatross Collection (2549).

Length 120 mm.

43843 U. S. N. M. N. $39^{\circ}57'6''$ W. $69^{\circ}16'$. Fish Hawk Collection.

Length 115 mm.

43844 U. S. N. M. N. 37° W. 74° . Albatross Collection.

Length 118 to 122 mm. 2 examples.

43845 U. S. N. M. N. $38^{\circ}47'20''$ W. $72^{\circ}37'$. Albatross Collection (2103).

Length 96 mm.

43846 U. S. N. M. N. $40^{\circ}53'30''$ W. $66^{\circ}24'20''$. Albatross Collection (2530).

Length 118 mm.

43847 U. S. N. M. N. $39^{\circ}50'$ W. $70^{\circ}26'$. Albatross Collection (2680).

Length 93 mm.

43848 U. S. N. M. Albatross Collection (2553). Length 62 mm.

43850 U. S. N. M. N. 38° W. 72° . Albatross Collection (2102).

Length 104 mm.

43851 U. S. N. M. N. $37^{\circ}20'42''$ W. $74^{\circ}17'36''$. Albatross Collection

Length 87 to 113 mm. 3 examples.

Lampanyctus idostigma Parr

Lampanyctus idostigma PARR, Bull. Bingham Oceanogr. Collection,

vol. 2, art. 4, Oct. 1931, p. 32, fig. 13. N. $24^{\circ}7'$ W. $108^{\circ}40'$,

286 fathoms; N. $16^{\circ}14'$ W. $99^{\circ}36'30''$, 625 fathoms; N. $11^{\circ}5'$

W. $89^{\circ}20'45''$, 300 fathoms.

Depth 6; head $3 \frac{1}{3}$. Snout $6 \frac{1}{3}$ in head from snout tip; eye $6 \frac{1}{3}$, equals snout; maxillary extends nearly 2 eye diameters behind eye, length $1 \frac{1}{2}$ in head from snout tip; interorbital low, eye impinging on upper profile.

No photophores at shoulder; 5 pectorals, fourth over third, elevated till level with interspace between subpectorals; 1 suprapectoral close below lateral line and well before subpectorals, which one above other, before second pectoral and upper close before pectoral fin base; 4 ventrals, elevation of second barely perceptible; 1 supraventral, nearly midway between lateral line and ventral fin base; anals 5 or 6 + 5 to 7, posteroanals all behind anal fin base; 3 supraanals in broadly angulate row, first lower than supraventral and over third ventral, second and third form straight line very obliquely to last ventral, second level with supraventral close before first anal, third close below lateral line well behind first anteroanal to above interval between second and third anteroanals; 2 posterolaterals, in inclined line with last anteroanal, upper close below lateral line; 4 precaudals, continuous with posteroanals, second to fourth broadly angulate with last spot close below end of lateral line, over third which well behind second. Supracaudal luminous scales 3, infracaudal 3.

D. 13, I, A. 17, I, inserted below last $2/5$ of dorsal base;
 least depth of caudal peduncle $3 \frac{1}{5}$ in total head length; pectoral
 $3 \frac{1}{8}$; ventral $2 \frac{4}{5}$.

Length without caudal 76 mm. (Parr.)

Off western Mexico.

Lampanyctus niger (Günther)

Nannobrachium nigrum GÜNTHER, Rep. Voy. Challenger, vol. 22,

1887, p. 199, pl. 52, fig. B. South of Philippines in

N. Lat. $4^{\circ}33'$ E. Long $127^{\circ}6'$, in 500 fathoms. --GILBERT,

Bull. U. S. Fish Comm., vol. 23, pt. 2, 1903 (1905),

p. 591 (Kaiwi Channel, 411 to 460 fathoms). --JORDAN and

JORDAN, Mem. Carnegie Mus., vol. 10, No. 1, Dec. 1922,

p. 13 (reference). --TAANING, Vidensk. Medd. Dansk Naturh.

Foren. København, vol. 86, 1928, p. 69 (type).

Myctophum (Lampanyctus) nigrum BRAUER, Zool. Anzeiger, vol. 28,

Nr. 10, Dec. 20, 1906, p. 396 (diagnosis in key); Deutsch. Tiefsee

Exp. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 242, text fig.

159 (N. $1^{\circ}51'$ E. $0^{\circ}31'2''$, Gulf of Guinea; S. $31^{\circ}21'1''$ E. $9^{\circ}45'9''$,

west of Cape Colony; S. $30^{\circ}6'7''$ E. $87^{\circ}50'4''$; S. $29^{\circ}6'2''$ E. $89^{\circ}39'$,

north of New Amsterdam; S. $6^{\circ}19'3''$ E. $73^{\circ}18'9''$, Chagos Archipelago;

N. $13^{\circ}2'8''$ E. $46^{\circ}41'6''$, Gulf of Aden). --PAPPENHEIM, Deutsch.

Südpolar Exp., vol. 15, Zool. pt. 7, 1914, p. 197 (S. $32^{\circ}8'$

W. $8^{\circ}28'$, 1000 meters; N. $28^{\circ}42'$ W. $34^{\circ}33'$, south of Azores, 10

meters). --BARNARD, Ann. South African Mus., vol. 21, pt. 1,

June 1925, p. 239 (off Cape Point).

Lampanyctus niger PARR, Bull Bingham Oceanogr. Collection, vol. 3,

art. 3, Dec. 1928, p. 87 (note). --FOWLER, Mem. Bishop Mus.,

vol. 10, 1928, p. 68 (compiled). --PARR, Proc. U. S. Nat. Mus.,

vol. 76, 1929, p. 20 (note). --NORMAN, Discovery Rep., vol. 2,

1930, p. 331 (S. $32^{\circ}45'$ W. $8^{\circ}47'$, 650 meters; S. $40^{\circ}34'30''$

W. $36^{\circ}35'30''$, 152 meters; S. $35^{\circ}26'$ E. $1^{\circ}43'30''$, 135 meters). --

BORODIN, Bull. Mus. Comp. Zool., vol. 72, No. 3, Aug. 1931, p. 76

(N. $40^{\circ}56'$ W. $39^{\circ}54'$, 700 to 800 fathoms; N. $47^{\circ}40'$ W. $37^{\circ}20'$, 600 fathoms).

Depth $5 \frac{1}{2}$; head $3 \frac{2}{3}$, width $2 \frac{2}{3}$. Snout $6 \frac{1}{2}$ in head from snout tip; eye 6, greater than snout, $1 \frac{2}{5}$? in interorbital; maxillary extends 2 eye diameters behind hind eye edge though not quite to hind well inclined preopercle edge, slender, length $1 \frac{1}{3}$ in head from snout tip; interorbital $3 \frac{1}{2}$, low. Gill rakers $6 + 12$, lanceolate, slender, little greater than eye.

Scales 35 in lateral line to caudal base, little enlarged; 3? above, 3? below, 14? predorsal. Scales all fallen.

Small antorbital photophore little inferior at front eye edge; 2 operculars, upper on line with lower eye edge and upper subpectoral, lower below and little behind hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace longest, fourth spot well elevated nearly high as upper subpectoral over third ventral; 1 suprapectoral, close below lateral line over and little before upper subpectoral; first or lower subpectoral behind upper though nearer same than either first or second pectoral spots before and close below bases of lowest pectoral fin rays, upper photophore close before and below pectoral fin origin; 4 ventrals; 1 supraventral close below lateral line opposite ventral fin origin; 6 + 8 anals, posteroanals behind anal fin base; 3 supraanals, first over third ventral about level with upper subpectoral, second slightly higher or about midway between lateral line and anal fin origin behind fourth ventral, third close below lateral line before first anteroanal; 2 posterolaterals, first or lower little behind and above last anteroanal, upper close below lateral line behind anal fin base and below adipose fin origin; 4 precaudals, first 2 low at rudimentary caudal fin rays, third little higher and below fourth at end of lateral line. Supracaudal luminous organs 4, infracaudal 3.

D. III, 10?, first branched ray $1 \frac{1}{4}$? in total head; adipose fin $3 \frac{2}{5}$; A. III, 14, I, first branched ray $1 \frac{3}{4}$?; caudal $1 \frac{1}{5}$?, forked; least depth of caudal peduncle $4 \frac{1}{5}$?; pectoral?; ventral $2 \frac{1}{4}$?

Dusky, scale pockets blackish. Head dark, opercles blackish. Iris dark gray. Fins all dark.

74714 U. S. N. M. Albatross Collection (4958). Length 64?mm. In poor condition.

Lampanyctus ater Taaning

Lampanyctus ater TAANING, Vidensk. Medd. Dansk Naturh. Foren.

Köbenhavn, vol. 86, 1928, p. 68. North Atlantic; diagnosis in key. --PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, 1928, p. (88) 104, fig. 17 (N. $32^{\circ}24'$ W. $64^{\circ}29'$, 10000 feet; N. $32^{\circ}19'$ W. $64^{\circ}33'$, 8000 feet); Proc. U. S. Nat. Mus., vol. 76, 1920, p. 20 (note). --NORMAN, Discovery Rep., vol. 2, 1930, p. 331 (S. $33^{\circ}25'$ E. $6^{\circ}31'$, 1000 meters; S. $33^{\circ}50'$ to $34^{\circ}13'$ E. $16^{\circ}04'$ to $15^{\circ}49'$, 350 to 400 meters; S. $46^{\circ}56'$ W. $46^{\circ}03'$, 1050 to 1350 fathoms; S. $34^{\circ}59'$ E. $16^{\circ}39'$, 370 to 450 meters).

Nannobrachium niger (not GÜNTHER) GILBERT, Bull. U. S. Fish Comm.,

vol. 23, pt. 1, 1903 (1905), p. 591 (Kaiwi Channel, 411 to 460 fathoms).

?Lampanyctus niger GILBERT, Mem. Carnegie Mus., vol. 6, No. 2, 1913,

p. 100 (Bungo Channel, 405 fathoms).

Depth $6 \frac{1}{2}$; head 4. Snout $5 \frac{3}{4}$ in head from snout tip; maxillary reaches well beyond eye, length $1 \frac{1}{5}$ in head from snout tip; interorbital evidently depressed, eye entering upper profile of head; hind preopercle edge strongly inclined.

Scales 37 or 38 in lateral line, enlarged.

Five pectoral photophores, first interspace longest, fourth spot elevated level with upper subpectoral and little posterior to third pectoral; 1 suprapectoral, close below lateral line and little posterior to first pectoral or midway between same and subpectorals; 2 subpectorals, one above the other, upper close before bases of lower pectoral rays; 4 ventrals equidistant, at same level; 1 supraventral, close below lateral line opposite ventral fin origin; 6 or 7 + 7 or 8 (1 abnormal), anteroanals equidistant, posteroanals closer and behind anal fin base; 3 supraanals, first anterior or above interspace of second and third ventral at same level as fourth pectoral and second supraanal, which little behind last ventral or opposite anal fin origin, third close below lateral line but before first anteroanal; 2 posterolaterals, lower above and behind last anteroanal, upper close below lateral line about opposite base of last anal ray; 4 precaudals, arched at lower caudal lobe base, uppermost close below end of lateral line above or slightly before third or penultimate. Luminous scales only on caudal peduncle, infracaudals extend more than half space between anal and caudal fins.

D. 14 to 16, fin height $2 \frac{1}{10}$ in total head length; adipose fin 4;
 A. 18 or 19, height $2 \frac{1}{3}$, fin origin about midway in dorsal length;
 caudal forked; least depth of caudal peduncle 3; ventral $2 \frac{1}{10}$.

Coloration not given.

(Parr.)

Atlantic, Antarctic and Pacific Oceans.

Lampanyctus cuprarius Taaning

Lampanyctus cuprarius TAANING, Vidensk. Medd. Dansk Naturh. Foren.

København, vol. 86, 1928, p. 68. North Atlantic; diagnosis in

key. --PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3,

1928, p. (88) 106, fig. 18 (N. 21° to 32° W. 64° to 77° , 4000 to

10000 feet).

Depth $5 \frac{3}{4}$; head $3 \frac{1}{2}$. Snout $5 \frac{1}{2}$ in head from snout tip; eye 5, slightly greater than snout; maxillary extends back well beyond eye though not quite to well inclined hind preopercle edge, slender, length $1 \frac{1}{3}$ in head; interorbital evidently depressed as orbit enters profile.

Scales 33 or 34 in lateral line, enlarged on caudal peduncle.

Pectoral photophores 5, first interspace longest, fourth spot little behind third and elevated level with upper subpectoral; 1 suprapectoral close below lateral line though slightly behind first pectoral; 2 subpectorals, close, one above other, upper close before lower pectoral fin ray bases; 4 ventrals, level, equidistant; 1 supraventral close below lateral line opposite first ventral; 5 to 7 + 4 to 6 anals, first interspace of anteroanals often long, posteroanals all behind anal fin base; 3 supraanals, first lowest or about same level as lower subpectoral and little nearer third than fourth ventral, second level with upper subpectoral, opposite anal fin base, uppermost close below lateral line and little behind first anteroanal; 2 posterolaterals, first or lower little above and behind last anteroanal and upper close below lateral line; 4 precaudals, second, third and fourth usually in straight or arched though always oblique line, with fourth in lateral line behind vertical from penultimate precaudal.

D. 16 or 17; A. 17 to 19. Length 62 to 71 mm. without caudal. (Parr.)

Atlantic Ocean.

Lampanyctus lineatus Taaning

Lampanyctus lineatus TAANING, Vidensk. Medd. Dansk Naturh. Foren.

Köbenhavn, vol. 86, 1928, p. 68. North Atlantic; diagnosis in

key. --PARR, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3,

1928, p. (88) 108, fig. 19 (N. 21° to 32° W. 64° to 77° , 4000 to

10000 feet).

Depth $6 \frac{3}{4}$; head 4. Snout 7 in head from snout tip; eye 6, little greater than snout; maxillary extends $2 \frac{1}{8}$ eye diameters behind eye, length $1 \frac{1}{4}$ in head from snout tip; interorbital low, eye impinging on upper profile.

Scales 38 to 40 in lateral line, enlarged on tail.

Pectoral photophores 5, fourth over and posterior to third, nearly level with upper subpectoral; 1 suprapectoral, close below lateral line and close behind first pectoral; 2 subpectorals, one above other, midway in first pectoral interval and upper close before middle of pectoral base; 4 ventrals, rarely 5, level; 1 supraventral, close below lateral line, also close behind first ventral; anals 7 to 9 + 6 to 9, level, posteroanals behind anal fin base; 3 supraanals, series angulate, first over third ventral interspace level with fourth pectoral, line from second and third through last ventral or little posterior, uppermost close below lateral line, before or above to slightly posterior to first anteroanal; 2 posterolaterals, in oblique line to last anteroanal and upper close below lateral line; 4 precaudals, usually separated from posteroanals, second, third and fourth in straight or curved oblique series, progressively elevated to fourth at and close below end of lateral line. Supracaudal luminous scales 5, infracaudal 6.

D. 17 or 18; A. 20 to 22, fin origin below middle of dorsal base; least depth of caudal peduncle 3 in total head length; pectoral?; ventral 2.

Length without caudal 138 mm.

(Parr.)

North Atlantic.

